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About the Journal

QQML- e-journal is an international scientific on-line open accessed peer-reviewed journal, which publishes scientific papers on diverse topics on Library and Information Science research.

The scope of the journal is to publish contemporary and quality research, including theoretical research papers and applications. The journal is open and encourages the use of various research methods (quantitative and qualitative methods).

QQML e-journal as a rule publishes the papers presented at the International conference QQML- Qualitative and Quantitative Methods in Libraries (www.isast.org).

Furthermore, QQML e-journal welcomes papers of the following types:
• Articles,
• Reports,
• Case Studies,
• Dissertations’ and Theses’ Abridgement,
• Reviews of recent publications relevant to the scope and the topics of the journal,
• Announcements of the International Associations,
• News about the LIS activities internationally.

The title of the journal QQML-e-journal (Qualitative and Quantitative Methods in Libraries-electronic journal) indicates the two major methodological trends and also two different ways of measuring quality and results.

Qualitative and Quantitative Methods (QQM) are proved more and more popular tools for Librarians, because of their usefulness to the everyday professional life. QQM aim to the assessment and improvement of the services, to the measurement of the functional effectiveness and efficiency.

For ages library science was considered as a practical job, without scientific basis and prospect. Analysis and Synthesis, methodologies and metrics are terms of the last two decades. We invite the cooperation of Professionals and Researchers, Theorists and Practitioners to address existential problems, to emphasize the role of methodologies and argument aiming to the maximum scholarship, reliability and view.

QQM are the mean to make decisions on fund allocation and financial alternatives. Librarians use also QQM in order to determine why and when their users appreciate their services. This is the start point of the innovation involvement and the ongoing procedure of the excellent performance. Systematic development of quality management in libraries requires a detailed
framework, including the quality management standards, the measurement indicators, the self-appraisal schedules and the operational rules. These standards are practice-oriented tools and a benchmarking result. Their basic function is to express responsibly the customer (library user) -supplier (library services) relationship and provide a systematic approach to the continuous change onto excellence. The indoor and outdoor relationships of libraries are dependent of their communication and marketing capabilities, challenges, opportunities and implementation programmes.

The Journal is supported by members of the Committees of the annual international conference on Qualitative and Quantitative Methods in Libraries.
Welcome to the QQML e-Journal, which delivers a very interesting set of papers on aspects of Qualitative and Quantitative Methods in Libraries from across the world. On this e-journal we would like to refer the best papers of QQML International Conference as well as Master theses and Candidate PhD research.

The sharing of research methodologies, findings and conclusions pursues the mutual enrichment of knowledge and experience of a variety of disciplines and approaches. QQML e-Journal aims to publish works that would be widely studied and cited and thus to support the further development of the research and the interaction between different scientific and research groups.

However, among QQML e-Journal’s goals is not only to present the research results but also to feed back the dialog in a way that might influence the professional success, the libraries’ advancement, the collaboration and the organizational change. The contributions for thinking include both scholarship and knowledge of best professional practices, while authors are asked to enter into a dialogue with scholars, professionals, researchers, and other readers, and to engage organizational and management communication literature and theories.

The focus is given to both the qualitative and quantitative aspects of analysis. QQML e-Journal publishes research papers and applications in the areas of libraries and archives and will be open to contributions from museums.

A selection of interesting papers that provoke the thought and creativity are provided at 2012 Journal Issues. Methodological, Technological, Humanitarian, Social, Organizational aspects are presented.
Libraries Do Make a Difference: Common Principles in Showing the Impact of Different Types of Libraries

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Abstract: In this paper, we describe a method for a common presentation of the statistics of different types of libraries in an easy-to-understand and illustrative way to be used as a tool for obtaining information as a basis for showing the impact and value of libraries. We compared the statistics of public and scientific libraries and defined the common data sets for them. These data sets that represent the essential key figures of the libraries give a uniform picture of different types of libraries (scientific or public). We combined the statistical data with data obtained from customer surveys from both library sectors and we built a web site for presenting this data. Our experience is that it will be necessary to improve data collection further opening the interfaces between the two different statistic databases (public and scientific libraries) so that the library managers, other decision makers and stakeholders can define even more versatile searches to combine the information.

Keywords: impact of libraries, Finland, Public libraries, Research libraries, statistics, open data

1. Introduction

The libraries must be able to offer fresh and reliable information in a useful form for the needs of the studies, teaching and research, and education of the citizens. They have to show the advantage and the value of their operation also when the economy resources are weakening and therefore they must be able to systematically show the quality and impact of their operations.

To promote this goal, The National Group for Assessing the Impact of Library Activities was established in Finland in 2005. The operation of the group is coordinated by the National Library. There are representatives from all the library sectors (public and scientific libraries) in the group. One of the goals of the group is to draw up a common set of indicators that could be used in all the library sectors (Laitinen & Saarti 2011). This set of indicators should be suitable for use by the libraries, by their parent organizations and by the financiers and other stakeholders.
To support the task of the group, we established a web page collecting together the focal indicators of library activities. This idea also promotes the quality recommendations set for the public libraries by the Ministry of Education and Culture (Viiri et al. 2010). In this paper, we describe how to combine data from many sources to show the impact of libraries in society. We used four different sources: Finnish Public Libraries Statistics (FPLS), Research Library Statistics Database (RLSD), National Customer Survey for Libraries (NCSL) made in 2010 and Statistics Finland.

In our project, we see the following chain of cause and effect (Fig 1). Libraries get input (funding, human resources, space etc.) and produces outcomes (loans, visits, information literacy teaching etc.). Value of outcomes depends on their quality and efficiency of functions. Impact is what comes from outcomes (the quality of life, better literacy, better science etc.). The high quality of outcomes makes it possible to achieve desired impact in society. Therefore libraries need multifaceted tools for measuring quality (Saarti et al. 2010).

Figure 1. Connections between input, output, outcome and impact. Input and output are processes inside the library, outcome and impact can be seen in the society as a result of them. Turning of any of the cogs affects all the others. E.g., change in input causes change in output, outcome and impact. To get the desired
impact, one must define the number and quality of the needed outputs and outcome. Inputs must be adapted to produce the needed output and outcome. Quality is the “oil” that makes the cogs turn more effectively. (Modified from Viiri et al. 2010, p. 17. - referred in English by Seppänen & Laitinen 2011.)

In our case, we want to gather information about the input, output, outcome and impact of libraries. Our purpose is to show what kind of benefits the libraries of different kind together give to the society as a whole.

2. Different sources to combine

In Finland, there are two different databases for library statistics: one for research libraries and another for public libraries. Coordination of databases has also been divided in two different units, one at the National Library of Finland and another in the Ministry of Culture and Education. This has made it difficult to make a unified picture of impact of libraries in Finland.

RLSD database has information about 103 scientific libraries: from universities, universities of applied sciences and few special libraries of the public sector. It is owned and developed by the National Library. The database monitors input and outcome of the libraries and its structure follows closely to the ISO 2789 standard.

The FPLS database has information about 326 public libraries. It is owned by the Ministry of Education and Culture and developed by the Centre for Economic Development, Transport and the Environment and the Helsinki City Library – Central Library of Finland. It has more pragmatic view of statistics and it follows only partly the ISO 2789 standard. Both of the statistical databases have quite a long history. They have been developed independently.

It must also be noted that purposes of the libraries are different. Scientific libraries are supporting education and scientific study. The objective of the library and information services provided by public libraries is to promote equal opportunities among citizens for personal cultivation, for literary and cultural pursuits, for continuous development of knowledge, personal skills and civic skills, for internationalisation, and for lifelong learning. It must also be noted that the use of all publicly funded libraries in Finland, whether they are scientific or public, is free of charge for everyone. Differences on functions and environmental connections make the statistics different, too. This causes problems when combining statistical data.

National Customer Survey has been made twice so far in 2008 and 2010. It has the same questions for all library sectors and also some sector specific questions.
Our first task was to compare these two different databases and find common interfaces between them. This proved out to be quite hard because databases are so different. The same data is collected in different ways. Some data is only collected into one database. Once we had collected common datasets, we had to choose which ones to use to show input, outcomes and impact.

3. Impact of libraries in Finland –web page

Our web page consists of four parts: the front page, inputs, outcomes and impact. At the front page, we gathered most important figures about each of our points of view.

To illustrate the impact of library, we show for example that the use of the library services improves the quality of life, work and studies.

The data was gathered from NCSL 2010. The customers were presented statements on library services to evaluate the importance of the different library services at their own library, and how well the library has succeeded in offering the services.

To reach information about the impact of library, the customers were asked to estimate how the library services have benefited their work, studies or other activities on the following scale: 1=not at all - 2=a little - 3=substantially - don't know. The results show that in the mean, the library has substantially improved the quality of work, studying or other activities of the customers (Fig. 2).
Figure 2. The customers estimate that the library has substantially improved the quality of their life. The scale: 1=not at all - 2=a little - 3=substantially.

To illustrate the outcomes of library, we show for example how the use of library has changed from physical visits to virtual ones. The number of downloads from the electronic collections of the libraries has been risen rapidly in the libraries of higher education (university libraries and the libraries of universities of applied sciences), and the number of virtual visits in the public libraries, too, is clearly increasing. A decreasing trend in physical library visits can be seen in all library sectors. The change has been about 30% at the libraries of the institutions of higher education and about 20% public libraries from year 2002. The data was gathered from RLSD and FPLS (Fig. 3-5).
Figure 3. There is a decreasing trend of physical visits in Finnish libraries.

Figure 4. The strong growth of the use of the electronic journals is evident especially in the university libraries of Finland.
To illustrate the quality of the library services, we show for example how satisfied the customers are with library services. The customers were asked to evaluate how well the library has succeeded as a whole in providing services on a scale from 1 to 5 where 1=very poorly, 2=poorly, 3=moderately, 4=well, 5=very well, don't know / not relevant (Fig. 6).

To compare the perceived satisfaction of the customers with library services with how important they considered that the library services are well functioning, they were, too, asked to evaluate the importance of library’s success to produce services on a scale from 1 to 5. In this scale, 1=not at all important, 2=not very important, 3=neither important nor unimportant, 4=quite important, 5=very important, don't know / not relevant. The data was gathered from NCSL 2010 (Fig. 6).

The results show that the customers were satisfied with the services of the library on average, and that they considered that it is very important that the library is able to respond to their needs (Fig. 6).

To illustrate the input of the library service, we show for example how the income of libraries is connected with Gross Domestic Product (GDP). The data was gathered from RLSD and FPLS and Statistics Finland. We measured the change of the Library total costs per target population and the GDP of Finland per inhabitant as a time series from the year 2002 to 2009. (Fig 7.)

Figure 5. There is an increasing trend of web visits in the Finnish public libraries.
Figure 6. On average, the users are satisfied with the services of the libraries in Finland. The scale from 1 to 5 where in success: 1=very poorly, 2=poorly, 3=moderately, 4=well, 5=very well, and in importance: 1=not at all important, 2=not very important, 3=neither important nor unimportant, 4=quite important, 5=very important.

Setting the index value of the start year 2002 as 100 (2002=100), we formed a time series that shows the growth of expenses per inhabitant in public libraries about 25% and about 30% growth of expenses per target population in the libraries of higher education. (Fig 7.)

Figure 7. The development of the total costs / target population in libraries compared with the gross domestic product (GDP) / inhabitant. The GDP and the total costs of the libraries are closely connected.
At the same time, the GDP increased by almost 20%, though in the year 2008, the GDP was +25% compared with the start level in 2002, but in the year 2009 GDP fell strongly. This falling of GDP did not reflect in the expenses of libraries in 2009. In this context, we did not analyse causality between the expenses of library and GDP, but there are references from the fact that the change in GDP is reflected as an input to the library (Kiviniemi et al. 2009). Keeping this in mind, it will be interesting to see the future development of GDP and its reflection to the expenses of libraries in Finland. (Fig 7.)

Contents at our web page is growing as we collect and combine data from different sources.

4. Conclusions

In the future, we are planning to make it easier to combine data. Both databases should be opened for users as xml format. Then it will be easier to combine statistical data with the different services such as library database and location data of libraries from different sectors (public and scientific). Also, the National Customer Survey for Libraries should be made open in the same way.

We plan to use ISIL (International Standard Identifier for Libraries and Related Organizations) as identifiers in all these databases. If all the sources are open and the identifiers are in use, we can build for example different kinds of visualizations about statistical data on a map. It would also make it possible for citizens to make their own queries and combinations of this data.

These challenges will be taken account in the future development of the databases.

References

Leveraging Semantic Analysis Technologies to Increase Effectiveness and Efficiency of Access to Information

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Abstract: This presentation will report on the results of a study of 245 publications and reports which were (1) classified to both LCSH for inclusion in a standard library catalog and classified and indexed to an economic development related topic classification scheme and institution specific thesaurus; (2) both manually classified and automatically classified using natural language processing (NLP) semantic technologies. The focus of the comparison is (1) a direct comparison of the quality and quantity of access points across schemes, and (2) the effect of variations on conceptual search (meaning versus word-based search systems). The research collection includes 245 digital publications and reports published by the World Bank which are accessible through OCLC’s WorldCat catalog and through the World Bank’s external web faceted Documents and Reports search system.

Keywords: Semantic analysis; natural language processing; automatic classification; Library of Congress Subject Headings; World Bank; OCLC WorldCat

Research Context

The inspiration for this research derives from lessons learned working with subject matter experts in the design of vocabularies to support effective search. Specifically, this and other in-progress research are being undertaken in the hopes of building a deeper understanding of the performance of source vocabularies in conceptual search. Conceptual search is designed to retrieve information that is “conceptually similar” to the information contained in the search query. A conceptual search looks for and tries to retrieve information that pertains to the ideas expressed in the search query. Conceptual search and term or word search are different approaches to an information retrieval challenge. Conceptual search focuses on the meaning expressed in the words of a query, rather than simple word or pattern matching. For this reason, the goodness and performance of conceptual search depends heavily on the underlying knowledge base. Conceptual search systems need deep knowledge of concepts, which are typically represented in knowledge organization systems (KOS) such as controlled vocabularies, thesauri and ontologies. Knowledge organization systems provide machine-level access to synonyms, hypernyms,
hyponyms, and variant or associative concepts for direct use in conceptual search.

Over the years, two primary approaches have dominated research into constructing the deep conceptual knowledge needed for concept search - those that follow the semantic analysis approach and those that follow the statistical approach. Statistical approaches to conceptual searching rely largely on word pattern detection and statistical alignment. Semantic analysis approaches to conceptual search leverage natural language processing, controlled vocabularies, thesauri, ontologies (sometimes referred to as Knowledge Organization Systems, or KOS), and more sophisticated query processing and query matching algorithms. Selective studies have demonstrated that concept search can be improved by the use of controlled vocabularies (Giunchiglia, Kharkevich, and Zaihrayeu, 2009; Miller, Beckwith, Fellbaum, Gross and Miller, 1990). The research reported in this paper focuses on the semantic approach but employs a hybrid approach between semantic and statistical.

Studies in the information science literature suggest that performance improvements in conceptual search can be achieved from the introduction of knowledge organization systems, specifically controlled vocabularies. However, these improvements have been qualified by the nature of the vocabularies and inherent level of human effort required to construct and maintain the controlled vocabularies. In particular, several studies have examined the nature and performance of Library of Congress Subject Headings (LCSH) (Fischer, 2005; Kreider, 2000; Marshall, 2003) and LCSH in comparison to other sources and approaches to vocabulary development, including author-assigned keywords, domain specific thesauri and controlled vocabularies (Dubois, 1984; Holley, 2007; Losee, 2009; McCutcheon, 2009; Olson, 2008; Schabas, 1982; Tonta, 1992). The studies have researched basic coverage and mapping of sources, the length and structure of terms, the level of generality-specificity of terms, and the use of the sources for indexing. However, these studies would tend to suggest that the maintaining these sources presents a significant constraint. The level of effort, required investment, and challenge of maintaining currency have generally precluded scaling this approach for conceptual search. A second constraint with this approach is the depth and extent of conceptual indexing required for individual documents and content objects. Over the years, these concerns have also led researchers to conclude that the statistical approach holds greater promise than the semantic.

These are critical limitations that must be overcome if conceptual search is to become a practical search option in the future. An alternative hybrid approach has been proposed in the early 21st century, though – the use of semantic analysis methods to generate and maintain knowledge organization systems and to support deep automated conceptual indexing. The hybrid approach may be a viable alternative to either full manual or full machine-based approaches. Conceptual searching becomes more practical if the level of effort required to
construct and maintain knowledge organization systems can be managed, and the productivity challenges of conceptual indexing can be met.

This research is a small step in exploring the feasibility of the hybrid approach. This research compares the potential value of two knowledge organization systems for conceptual search - specifically, (1) the comparative differences between the Library of Congress Subject Headings (which are entirely manually constructed and designed for use in traditional library catalog “term-based” searching), and the World Bank Enterprise Topic Thesaurus (generated using a combination of semantic and manual methods). This research also explores the comparative differences in indexing practices achieved manually and using machine-based approaches. Observations on the implications for conceptual search are presented.

The Research Questions

The research explores two fundamental issues related to conceptual search. First, can a semantically generated knowledge organization system such as the World Bank Enterprise Topic Thesaurus perform as well or better than an established and universally accepted controlled vocabulary such as the Library of Congress Subject Headings? Second, can machine-based conceptual indexing methods perform as well or better than high quality manual subject indexing methods, i.e., can we make improvements in indexing productivity?

Research Methodology

The research team translated these issues into four specific research questions, including:

- **Question 1:** Given a controlled set of documents indexed with two distinct vocabularies, what is the rate of convergence of conceptual indexing terms and subject headings assigned, i.e., can we surpass the current performance of manually produced KOS using semantically generated KOS?
- **Question 2:** What is the nature of the convergence between indexing terms assigned from the two vocabularies (i.e., exact match, partial match, variants, etc.) and does the convergence have value for conceptual search?
- **Question 3:** Is there a variation in the construction of indexing terms across the two vocabularies, i.e., can we maintain the level of quality of indexing term construction using semantic approaches?
- **Question 4:** What is the comparative rate of assignment of manually generated indexing terms and machine assisted indexing terms, i.e., is the hybrid approach a feasible alternative for deep conceptual indexing?
The context for exploring these four questions was a set of controlled documents which had been (1) indexed to both Library of Congress Subject Headings, and the World Bank Thesaurus; and (2) both manually and machine-indexed. The World Bank’s publicly available documents and publications were selected as the target collection for several reasons. First, the World Bank’s documents and publications are widely respected and are likely to be found not only in the World Bank’s repositories, but also in academic library collections. Where World Bank documents are found in academic library catalogs, they are likely to be manually indexed. In recent years, the World Bank implemented automated indexing methods for subject analysis. Second, World Bank’s documents are likely to be indexed using both the World Bank Thesaurus indexing terms and the Library of Congress Subject Headings. The World Bank’s machine assisted indexing methods leverage the World Bank Thesaurus as an embedded knowledge organization system. Academic libraries are likely to use Library of Congress Subject Headings. Third, there was a high probability that full metadata would be easily available on both the World Bank’s external web search and through OCLC’s WorldCat catalog.

Creating the Research Data Set

The first research task was to identify a broad set of documents and publications to construct the project data set. The World Bank’s external website supports a faceted search for documents and publications. One of the most popular facets is searching by “Document Type.” Document Types are organized into five high level categories – Board Documents, Country Focus, Economic & Sector Work, Project Documents, and Research and Publications. Of all five document types, Research and Publications were most likely to be found in academic library collections. The project team identified 337 World Bank research documents and publications, and downloaded their respective metadata as the control data set. Then, each document title was searched by author and title in WorldCat. Of the initial set of 337, a total of 245 (72.7%) were found in WorldCat. From WorldCat, the OCLC record numbers and LC Subject Headings were downloaded and added to the bibliographic data for each of the 245 titles.

These comparable metadata for these 245 titles comprised the project data set. The data set included 81 publications (books), 94 journal articles, and 70 documents representing other types of research documents such as Annual Reports, Commodity Working Papers, Departmental Working Papers, Environmental Working Papers, Energy Sector Management Assistance Program (ESMAP) documents, Financial Flows papers, Global Development Finance papers, Global Environment Facility documents, Human Capital papers, Issues in Agriculture papers, research papers from Latin America and Caribbean Region, Managing Agricultural Development in Africa (MADIA), Poverty Assessments (PA), Poverty Research, Social Policy, Special Program for African Agricultural Research (SPAAR), United Nations Development
Programme (UNDP), and Water and Sanitation, and last, World Bank Institute reports.

Review and Evaluation Methodology

Excel spreadsheets were used to capture, count, analyze, and compare indexing terms and topics. The metadata and bibliographic data downloaded provided an exploratory base of 12,156 unique conceptual indexing terms from the World Bank Thesaurus, and a total of 614 unique LCSH subject headings. The research team reviewed the comparative metadata for the 245 titles item by item, and word by word. Across all documents in the project data set, the reviewers read and marked up 28,487 World Bank Thesaurus indexing terms and 835 LC Subject Headings assigned to the 245 titles.

Table 1. Comparison of LCSH and World Bank Thesaurus Assigned and Unique Terms

<table>
<thead>
<tr>
<th>Source</th>
<th>Total Indexing Terms Assigned</th>
<th>Total Unique Terms Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCSH Terms</td>
<td>835</td>
<td>614</td>
</tr>
<tr>
<td>Controlled Vocabulary/Machine</td>
<td>28,487</td>
<td>12,156</td>
</tr>
<tr>
<td>Assigned</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Research Results

The results for the four research questions are presented below. Observations and recommendations drawn are also included.

Question 1: Given a controlled set of documents indexed with two distinct vocabularies, what is the rate of convergence of conceptual indexing terms and subject headings assigned, i.e., can we surpass the current performance of manually produced KOS using semantically generated KOS?

The rate of matching is particularly important to conceptual search. Conceptual search systems need to have access to a broad knowledge base, including exactly matching concepts, partially matched concepts, variant terms. The research team compared conceptual indexing terms and subject headings using the well formed categories established by Strader in her study of Electronic Theses and Dissertations (2009). Strader identified six types of matches including: Exact Match, All Present, Partial Match, Needs 2 LCSH, Variant, and No Match. Of Strader’s six match types, we found that four had value for this research. The match categories borrowed from Strader and used in this research are defined in Table 2.
Table 2. Categories of Match

<table>
<thead>
<tr>
<th>Type of Match</th>
<th>Description of Matching Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exact Match</td>
<td>Exact match of the words in the concept, including plurals (e.g., labor regulations and labour regulations), acceptable spellings (i.e., ecosystem and ecosystems), other language forms (i.e., -- include Spanish language forms here), or exact concept match including equivalent terms (e.g., biodiversity, species diversity, biological diversity)</td>
</tr>
<tr>
<td>Partial Match</td>
<td>Partial match of the concepts in the indexing term or subject heading such as a narrower or broader form of the concept (e.g., biodiversity and forest biodiversity), or a single indexing concept aligned with a compound LCSH (e.g., Roads &amp; Highways vs. Roads, Highways)</td>
</tr>
<tr>
<td>Variant</td>
<td>Conceptual variant – covers the core concept but speaks to either a refinement or other associative relationship with the core concept (e.g., biodiversity and biodiversity management)</td>
</tr>
<tr>
<td>No Match</td>
<td>Terms were not present in any of the above forms. Concept was missed entirely by the other source or indexing method.</td>
</tr>
</tbody>
</table>

Strader also defined the criteria for matching as a “sequence of words.” This research takes as a starting point the definition of a “concept match” – equivalent meaning rather than equivalent words. The idea of concept match derives from definitions of equivalent relationships in the ANSI/NISO Z39.19 standard governing Thesauri and Classification Systems. For example, in Strader’s approach, Biodiversity, Biological Diversity, Species Diversity and Species Variation might be considered either Variants or Partial Matches. They would not be characterized as exact matches. Taking a conceptual match approach, these four concepts would be considered exact matches. Similarly, Labor and Labour would be a conceptual match, as would be Climate change and Climatic change.

A further variation on Strader’s approach is the focus only on subject terms and headings. Library of Congress Subject Headings often contain subdivisions that pertain to countries, resources, time periods, or other non-topical terms; none of these subdivisions were included in the comparisons. The World Bank Thesaurus coverage focuses on topical subject domains. Names of countries, regions or types of resources are treated as separate and distinct metadata attributes and supported by distinct controlled reference sources. To ensure comparability, LC Subject Headings subdivisions that pertained to countries, regions, or types of resources were removed from consideration. In addition, due to common indexing practices in academic libraries, LCSH subdivisions often contain repetitive terms. For research purposes, repetitive LCSH terms were counted only once for the same bibliographic record. For example, Economic development – Honduras – Case Studies and Economic development
Table 3 indicates that 66.45% of the Library of Congress Subject Headings used were matched to World Bank Thesaurus conceptual indexing terms. This is a high rate of coverage for two distinct vocabularies, and is likely due to the conceptual foundation of the World Bank Thesaurus. 41.93% of the total matches were exact matches. 17.74% of all matches were Partial Matches and Variant Matches accounted for the remaining 40.32%.

Table 3.
Raw Counts of LCSH Matches

<table>
<thead>
<tr>
<th>Category</th>
<th>Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCSH Exactly Matched by Indexing Terms</td>
<td>234 (41.93%)</td>
</tr>
<tr>
<td>LCSH Partially Matched by Indexing Terms</td>
<td>99 (17.74%)</td>
</tr>
<tr>
<td>LCSH Matched by Variant Indexing Terms</td>
<td>225 (40.32%)</td>
</tr>
<tr>
<td>Total LCSH Headings Matched by Indexing Terms</td>
<td>558 66.45%</td>
</tr>
<tr>
<td>LCSH Not Matched by Indexing Terms</td>
<td>280 33.55%</td>
</tr>
<tr>
<td><strong>Total Headings</strong></td>
<td><strong>835 100.00%</strong></td>
</tr>
</tbody>
</table>

In contrast, the Library of Congress Subject Headings missed 85% of the conceptual indexing terms (Table 4). The difference in coverage was due in part to the difference in number of terms assigned in traditional academic library indexing and conceptual indexing approaches. A total of 835 subject headings were assigned, compared to 28,487 conceptual indexing terms. Of the conceptual indexing terms assigned, Library of Congress matched only 14.99% - 85.01% were not matched in any form. Only 8% were exact matches, 20.13% were Partial Matches, and the remaining 71% were Variant Matches.

Table 4.
Raw Counts of Controlled Vocabulary Indexing Terms

<table>
<thead>
<tr>
<th>Category</th>
<th>Numbers</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>WB Thesaurus Terms Exactly Matched by LCSH</td>
<td>245 (8.22%)</td>
<td></td>
</tr>
<tr>
<td>WB Thesaurus Terms Partially Matched by LCSH</td>
<td>610 (20.14%)</td>
<td></td>
</tr>
<tr>
<td>WB Thesaurus Terms Matched by Variant LCSH</td>
<td>2,170 (71.64%)</td>
<td></td>
</tr>
<tr>
<td>WB Thesaurus Terms Matched by LCSH</td>
<td>3,029 14.99</td>
<td></td>
</tr>
<tr>
<td>WB Thesaurus Terms Not</td>
<td>24,216 85.01%</td>
<td></td>
</tr>
</tbody>
</table>
Table 5 provides a side-by-side comparison of the convergence rates of Library of Congress Subject Headings and World Bank Thesaurus conceptual indexing terms.

### Table 5.
**Breakdown of Matches of LCSH and World Bank Thesaurus Indexing Terms**

<table>
<thead>
<tr>
<th>Category</th>
<th>% LCSH Assigned Terms Matched by World Bank Thesaurus</th>
<th>% World Bank Thesaurus Assigned Terms Matched by LCSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Matched</td>
<td>33.55</td>
<td>85.01%</td>
</tr>
<tr>
<td>Total Matches</td>
<td>66.45</td>
<td>14.99%</td>
</tr>
<tr>
<td><strong>Breakdown of Matching Terms</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exact Match</td>
<td>41.94%</td>
<td>8.22%</td>
</tr>
<tr>
<td>Partial Match</td>
<td>17.74%</td>
<td>20.14%</td>
</tr>
<tr>
<td>Matched by Variant</td>
<td>40.32%</td>
<td>71.64%</td>
</tr>
</tbody>
</table>

**Question 2:** What is the nature of the convergence between indexing terms assigned from the two vocabularies (i.e., exact match, partial match, variants, etc.) and does the convergence have value for conceptual search?

The research team also examined the nature of each category of match. Tables 6 through 10 provide illustrative examples of Exact Match, Partial Match, Variant Match, and missed (Not Matched) headings and indexing terms. Strader’s matching criteria also provide a framework for understanding how the semantically generated vocabulary can be leveraged in conceptual searching. Exactly matched terms provide insight into the potential use of “equivalent meaning” for automated expansion of query terms. Table 6 provides examples of exact matching terms found in both sources, including one example of exactly matching “meanings” beyond simple word matches.

### Table 6.
**Sample Exactly Matched LCSH Headings and Indexing Terms**

<table>
<thead>
<tr>
<th>LCSH Headings</th>
<th>Controlled Vocabulary Indexing Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIDS (Disease)</td>
<td>AIDS</td>
</tr>
<tr>
<td>Carbon content</td>
<td>Carbon content</td>
</tr>
<tr>
<td>Climatic change</td>
<td>Climate change, climate sensitivity, climate variability, climate variation, climate variations, climate vulnerability, climatic change, climatic</td>
</tr>
</tbody>
</table>
Strader’s categories for “partial match” will require some translation and interpretation before the true value for conceptual search might be assessed. The challenge is the varied nature of “partial match” in a word-based versus a conceptual search context. In some instances, “partial matches” might be narrower concepts in conceptual search, and in others they may be treated as close equivalent or exactly matching terms.

Table 7.
Sample Partially Matched LCSH Headings and Indexing Terms

<table>
<thead>
<tr>
<th>LCSH Headings</th>
<th>Controlled Vocabulary Indexing Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Integrated water development</td>
<td>Water development</td>
</tr>
<tr>
<td>Occupational retraining</td>
<td>Retraining</td>
</tr>
<tr>
<td>Rural conditions</td>
<td>Rural areas</td>
</tr>
<tr>
<td>Teacher education</td>
<td>Training of teachers</td>
</tr>
<tr>
<td>Agricultural extension work</td>
<td>Agricultural extension services</td>
</tr>
</tbody>
</table>

Strader’s categories for “variant terms” surface perhaps the clearest indication of potential value for conceptual searching of the hybrid approach, grounded in a semantically generated controlled vocabulary. Table 8 provides a view of the rich expansion of variant concepts from Library of Congress Subject Headings and the World Bank Thesaurus.

Table 8.
Sample Variant Matched LCSH Headings and Indexing Terms

<table>
<thead>
<tr>
<th>LCSH Headings</th>
<th>Controlled Vocabulary Indexing Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tariff</td>
<td>Tariff barriers, tariff concessions, tariff equivalent, tariff equivalents, tariff levels, tariff negotiations, tariff preferences, tariff protection, tariff rates, tariff reduction, tariff reform, tariff revenue, tariff revenue losses, tariff schedule, tariff setting, tariff structure, tariff structures</td>
</tr>
<tr>
<td>Transportation</td>
<td>Transport, transport agencies, transport agreements, transport capacity, transport corridors, transport cost, transport costs, transport equipment, transport facilitation, transport infrastructure, transport investment, transport investments, transport market, transport modes, transport network, transport</td>
</tr>
</tbody>
</table>
Table 9 provides examples of entire concept areas that were missed either as a result of lack of coverage in the Library of Congress Subject Headings or due to manual indexing practices and constraints.

Table 9.
Sample Clusters of Indexing Terms Lacking in LCSH

<table>
<thead>
<tr>
<th>Concept Area</th>
<th>Indexing Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumers</td>
<td>Consumers, consumer choice, consumer demand, consumer goods, consumer groups, consumer preferences, consumer price indexes, consumer prices, consumer products, consumer protection, consumer protection regulations, consumer surplus</td>
</tr>
<tr>
<td>Community-driven development</td>
<td>Community-driven development, community access, community action groups, community capacity, community colleges, community development, community education, community engagement, community facilities, community infrastructure, community involvement, community management, community organizations, community participation</td>
</tr>
<tr>
<td>Aquifers</td>
<td>Aquifers, groundwater</td>
</tr>
</tbody>
</table>

Taking the LC Subject Headings as a baseline for comparison, only one topic area was missing from the World Bank Thesaurus – designation of Communist countries and other terms that may reflect a political perspective. While there was extensive coverage of politics and political systems, the World Bank Thesaurus did not use the designation “Communist countries” to refer to subject matter content. All other areas identified at the concept level in LCSH were covered in the World Bank Thesaurus.

**Question 3:** Is there a variation in the construction of indexing terms across the two vocabularies, i.e., can we maintain the level of quality of indexing term construction using semantic approaches?

We expect the conceptual indexing terms to achieve a greater level of specificity and granularity. This can be represented simply in more atomic concepts or in a more extensive description of the concept, as represented by words used in the Heading or indexing term. While it was the case that more atomic level concepts were included in the World Bank Thesaurus, Table 10 indicates that
there was no variation in the number of words per heading or indexing term. Both sources followed good practice guidelines for indexing term construction.

<table>
<thead>
<tr>
<th>Source</th>
<th>Ave. # Word Per Heading or Indexing Term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Library of Congress Subject Headings</td>
<td>2.073</td>
</tr>
<tr>
<td>World Bank Thesaurus Indexing Terms</td>
<td>2.029</td>
</tr>
</tbody>
</table>

**Table 10**

**Average Number of Terms**

Question 4: What is the comparative rate of assignment of manually generated indexing terms and machine assisted indexing terms, i.e., is the hybrid approach a feasible alternative for deep conceptual indexing?

Indexing practices for both the traditional academic library context and the machine-generated metadata context are prescribed. The results of the exploratory research are not unexpected. In the academic library setting, a generally accepted practice is to assign three, but generally not more than five, subject headings (Studwell, 1990). The research data set was entirely representative of academic library indexing practices. The average number of Library of Congress Subject Headings assigned was 3.36. Some bibliographic records had no subject descriptors. Machine assisted indexing identified a significantly greater number of relevant conceptual indexing terms than were suggested through manual indexing. In the machine-generated metadata context, the number of conceptual indexing terms is determined by the density and coverage of the content. A general upward limit of 330 is placed on documents and publications available on the Bank’s external web. The limit is set higher for internally accessible documents. On average, the same documents had 115.77 conceptual index terms.

**Table 11.**

**Average, Median, Maximum and Total Indexing Terms and LCSH per Title**

<table>
<thead>
<tr>
<th>Source</th>
<th>Average</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Bank Thesaurus / Machine Assigned</td>
<td>115.77</td>
<td>3</td>
<td>245</td>
<td>113.5</td>
</tr>
<tr>
<td>LCSH/Manually Assigned</td>
<td>3.36</td>
<td>0</td>
<td>11</td>
<td>4</td>
</tr>
</tbody>
</table>
Conclusions

The research explored two fundamental issues related to conceptual search. First, we questioned whether a semantically generated knowledge organization system such as the World Bank Enterprise Topic Thesaurus could perform as well or better than an established and universally accepted controlled vocabulary such as Library of Congress Subject Headings. Second, we asked whether machine-based conceptual indexing methods could perform as well or better than high quality manual subject indexing methods (i.e., can we make improvements in indexing productivity?). The research results suggest that the semantically generated controlled vocabulary achieves a comparably high performance level. For conceptual search, the results suggest that the semantically generated controlled vocabulary provides greater value than manually assigned subject headings. The research results also suggest that hybrid machine-based indexing methods that are grounded in rich knowledge organization systems are a feasible and scalable alternative to either pure manual or pure statistical indexing methods.

Acknowledgements

The authors wish to thank their research assistants, Tom Burdick and Nicole Yoder, for their contributions to this paper.

References

http://www.loc.gov/loc/lcib/9808/lcsh-100.html


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1 Library of Congress Subject Headings (LCSH) is a controlled vocabulary, originally developed in 1898 by the Library of Congress for its own internal cataloging needs, which has become an internationally adopted standard source for topical terms. It contains over 250,000 subject headings, and has been described as “the most comprehensive general controlled vocabulary” in the world (Chan, 1998). LCSH terms are arranged in alphabetic, or dictionary, order. They are not organized by facets or by topical term groupings, however, all terms are related to one another through the tracing of equivalent (synonymic), hierarchical (broader/narrower term), and associative (related term) relationships. A primary feature of LCSH is the extensibility of the headings through subdivision. Topics that have been chosen to describe the subject matter of a work may be further specified using topical, geographical, chronological, or genre subdivisions. An example, drawn from a record analyzed for this study, would be: Conservation of natural resources—Thailand—Periodicals. As noted above, however, for the purposes of this study the main entry point of the heading was usually chosen to determine whether or not there was a match between the LCSH heading manually assigned to the work and World Bank thesaurus term automatically assigned to the work. LCSH is a general vocabulary that may be used for cataloging all types of library materials. Its level of granularity makes it useful for providing subject access to larger library collections of monographs, periodicals, multimedia and audiovisual materials, and
other materials commonly found in libraries. It is less helpful for providing entry points for technical literature and articles within periodicals, due to its generalist nature and the limits to which it can reflect depth of coverage of topics in works (most works cataloged using LCSH are assigned no more than three or four headings).

The World Bank Thesaurus is an organizational thesaurus designed to facilitate conceptual searching of documents, publication and all other types of content related to any aspect of economic development. The Thesaurus is inclusive of all Bank interests and issues over the Bank’s 70-year history. It is also intended to be sufficiently flexible and robust to manage those interests in the future. The Thesaurus covers approximately 28 high level topics (Agriculture, Communities and Human Settlements, Conflict and Development, Education, Energy, Environment, Finance, Gender, Governance, Health, Industry, Poverty Reduction, Rural Development, Urban Development, Transport, etc.). Each high level topic is subdivided into up to 36 subtopics. Each subtopic has an elaborated controlled vocabulary of between 500 and 10,000 conceptual indexing terms. The Thesaurus is comprised of approximately 500,000 terms, which are designed to support conceptual indexing and searching.

The conceptual indexing terms assigned to the World Bank documents and publications are generated automatically using the SAS/Content Categorization Suite. The Categorization Suite includes grammar based concept extraction, rule-based concept extraction, dynamic categorization, rule-based categorization, and summarization technologies. These technologies have underlying Natural Language Processing capabilities, leverage extensive internal organizational knowledge bases and support the construction of institution-specific rules for conceptual indexing. Automatically generated metadata is stored as persistent metadata in metadata records, which are managed in organizational data stores.

Ebook Users Speak! Analyzing Comment Boxes from an Ebook Value Survey

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Abstract: In late 2010 the University of Illinois at Urbana-Champaign (UIUC) Library participated in a global ebook user study conducted by Elsevier Publishing. The 129 UIUC participants performed searches on ScienceDirect in their research subject areas, which resulted in reading 2-4 ebooks per person from the Elsevier ebook platform. After examining the ebooks, the participants responded to a questionnaire concerning their format preferences, they completed a logbook for each ebook they read/used, and they subsequently provided feedback, including their estimation of ebook value. Qualitative data gathered from comment boxes were analysed to compare to quantitative survey results because while the survey showed very favourable reactions to the ebook format, the written comments were mixed. This case study examines how the technical aspects of access to ebooks affect user’s attitudes and acceptance of e formats for research purposes and addresses the importance of qualitative research in a primarily quantitative study.

Keywords: Text Box; Comment Box; Survey; Open Ended Questions; Ebooks; Ebook Use.

1. Introduction

User surveys with mixed methods (qualitative and quantitative) often return mixed results as well. In this study, a triangulation method was used to determine which aspects of patron responses to ebooks are most likely correct. Three different types of methods were used: unobtrusive ebook use data collected from publishers (using COUNTER data), quantitative survey data, and qualitative comment box textural data, both collected from logbook diaries of ebook users. The overarching purpose of the study was to determine the value of ebooks to both users and to libraries. Previous research by Chrzastowski (2011) determined that both libraries and ebook users benefit from the ebook format; however, comment box data from the ebook user survey pointed to a mixed reaction to ebook value. This study attempts to delve farther into the survey data by by examining textual comments responding to questions about the value ebook users assign to this format.
2. Previous Studies
Chrzastowski (2011) previously reported on a portion of this research and summarized a segment of academic ebook user research up to 2010. Courant and Nielsen (2010) determined that libraries can economically benefit from the ebook format because ebooks require a smaller investment in space costs, cleaning and maintenance costs, electricity and climate control, staffing and circulation when compared to print books. Chrzastowski (2011) added to these benefits by examining local cost/use data at the University of Illinois at Urbana-Champaign (UIUC). As shown in Table 1, ebooks at UIUC are heavily used and their cost-per-use is extremely cost effective. The number of ebook titles purchased is growing each year, increasing by 9% between 2007-2008 and 27% between 2010-2011; use is increasing too, but some of this can be attributed to the increase in titles available.

It is important to remember that local use data will vary and will affect other institutions’ cost/use outcomes. However, a good case can be made for ebook value to libraries based on research by Courant and Nielsen, and local use data will serve to inform further cost/value totals.

Chrzastowski also studied ebook value from the perspective of the user. More detailed information on these two methodologies is found later in this paper.

Table 1. Cost and use data for UIUC library ebooks, FY 2008-2011; from Chrzastowski (2011).

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>#Ebooks</th>
<th>Amount Spent</th>
<th>#Ebooks Added from Previous Year</th>
<th>Avg. $ per new Ebook</th>
<th>Total Uses</th>
<th>Cost Per Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>292,002</td>
<td>$185,991</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>345,186</td>
<td>$224,047</td>
<td>27,531</td>
<td>$8.14</td>
<td>151,089</td>
<td>$1.48</td>
</tr>
<tr>
<td>2009</td>
<td>411,364</td>
<td>$204,678</td>
<td>66,178</td>
<td>$3.09</td>
<td>251,273</td>
<td>$0.81</td>
</tr>
<tr>
<td>2010</td>
<td>484,768</td>
<td>$383,167</td>
<td>73,404</td>
<td>$5.22</td>
<td>563,871</td>
<td>$0.68</td>
</tr>
<tr>
<td>2011</td>
<td>614,203</td>
<td>$732,725</td>
<td>129,435</td>
<td>$5.66</td>
<td>709,944</td>
<td>$1.05</td>
</tr>
</tbody>
</table>

3. Methodology and Results
The three methods used in this research were 1) unobtrusive ebook use data collected from publishers (COUNTER data), 2) quantitative survey data, and 3)
qualitative comment box survey data. Method 1 collected UIUC patron ebook use. For the purpose of this study, a "use" of an ebook was counted when a user successfully viewed or downloaded a section (generally by chapter) of an ebook through the vendor’s portal, and this definition of use follows Counter Book Report 2 (Number of Successful Section Requests by Month and Title) for most vendors. The data are not 100% complete; however, as only 75% of our vendors were able to supply Counter-compliant statistics and only 33 of 40 (82%) ebook publishers were able to provide use data at all. This obviously resulted in an undercounting of total ebook use.

Methods 2 and 3, a qualitative and quantitative survey of UIUC ebook users, were conducted in fall 2010 by Elsevier. UIUC participants (129 faculty and graduate students) took a pre-logbook questionnaire, used Elsevier’s ScienceDirect ebook platform, searched for and used Elsevier ebooks, and filled out logbook diaries and a final survey to document their experiences. Chrzastowski’s (2011) research examined ebook value by employing methodologies 1 and 2. For this study, the qualitative data from the Elsevier survey were examined to determine why participants appeared to use comment boxes to report experiences that may not match the data from the quantitative part of the study. The comment box that received the most responses (435 comments from 516 ebook uses) was identified as the richest comment site. Comments were divided into three categories: negative, positive and not clear. Table 2 shows the top ranked comments provided by users. This comment box directly follows the question whose results are shown in Figure 1. This quantitative question generated a nearly 70% positive response to a question asking about the value users found in using ebooks on ScienceDirect. However, this comment box generated responses that were 45% negative, 36% positive and 19% unclear.

Table 2. Top six responses generated from 435 comments in response to the suggestion to “Please elaborate”. Figure 1 shows the results and the question posed directly prior to this open comment box.

<table>
<thead>
<tr>
<th>Comment Description</th>
<th>Not Clear</th>
<th>Negative</th>
<th>Positive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of relevant material</td>
<td>2</td>
<td>89</td>
<td>0</td>
</tr>
<tr>
<td>Did not have access to material</td>
<td>10</td>
<td>57</td>
<td>5</td>
</tr>
<tr>
<td>Did no better providing information than other resources</td>
<td>5</td>
<td>27</td>
<td>0</td>
</tr>
<tr>
<td>Obtained relevant/useful information</td>
<td>2</td>
<td>0</td>
<td>79</td>
</tr>
<tr>
<td>Would serve as a nice additional resource</td>
<td>0</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Liked the ebook because it gave background information</td>
<td>4</td>
<td>1</td>
<td>39</td>
</tr>
</tbody>
</table>
Figure 1. Results from the “value” question posed to UIUC participants in the Elsevier ebook study. Nearly 70% of users found the ebooks they used either a book they needed or which would be nice to have, a clear majority favouring this format. From Chrzastowski (2011).

A more in-depth analysis of both negative and positive comments demonstrates users’ frustrations with technology, as well as their delight in finding the ideal reference at their fingertips. Nearly all of the negative comments (173 of 196 comments, or 88%) took issue with the irrelevancy of the material found, problems with accessing the information, or the fact that the search and subsequent ebook was no better than other resources (making the search again irrelevant). The negative comments can be summarized by this user’s statement: “I found one ebook here that my other sources did not find. However, the ebook doesn't offer anything more than ebooks I found using other sources, so it's not worth my time to search ebooks to only get one unique ebook that really offers no new information.”

It is interesting that so many users commented about being unable to access the information they discovered through the search process. The study made full access to ScienceDirect available to every participant, but over 15% of comments noted an inability to view or read the full-text ebook. If users in this controlled environment had issues with access, the scale of this problem facing everyday users is easy to imagine. A simple way to increase user satisfaction is not only to make the ability to find resources a priority, but also to make them accessible. As one user commented, “While I trust that many of these books would be just as valuable, if not more so (than journal articles)... it is difficult if not impossible to access many of these resources via the internet.”
The third-largest group of negative comments focused on the fact that (in some users’ opinions) the ebook platform used for this study did no better than other resources at providing access to information being sought. Comments in this area primarily compared the study’s search platform to Google and/or GoogleScholar, and found it no better or worse. Commented one participant, “In this search, my Google search returned much more relevant content (in 3 scholarly articles and a book) than ScienceDirect.”

Competition in the marketplace means that users have many choices – and often select those either most familiar or most productive. It also means that satisfied users may be hard pressed to move to a new platform that offers them no significant improvements over their current favorite. Best for users and for authors is a finding tool that links to a broad array of sources, not just those of a particular publisher. And according to this user, “Many books chapters I got from Springer and John Willey with our university access are also relevant to the subject; however, I think if sometimes having more than one kind of ebook search engine can help to complement some deficiencies of each search engine.” So some scholars are willing and interested in searching more than one platform and publisher if the results are sufficient to warrant the effort.

Positive comments also fell into three major areas: that the resource was in fact useful and provided relevant information; that the resource, because it was a book or monograph, offered a broader perspective and more background information; and that the information was a good additional resource. By far, most positive comments reported that ebooks worked well and produced relevant references in full text on demand. Noted one participant, “I was surprised at the number of relevant hits that came up when searching through books; pleasantly surprised, will use book searches in the future.” One participant also addressed the positive aspects of a Google/ScienceDirect comparison: “The ScienceDirect/Elsevier search retrieved only 10 results but a greater number of them were pertinent (i.e., what I was looking for). Google obviously didn’t weed out irrelevant results for me and required a lot more hunting on my part in order to track titles/resources down.”

“Not clear” comments were just that: not clear about whether the remarks were positive, negative or both. Many times respondents made both negative and positive comments, making it harder to classify. For example, one participant wrote, “The book I found will provide some good information for me, but was not essential.” Many of the “not clear” comments were also just comments, such as, “Journal articles are also shown in the search results.” Most “not clear” comments were too hard to classify as either positive or negative and therefore were added to these categories.
4. Conclusions

Chrzastowski’s (2011) research found that ebooks provide good financial value for libraries and that library ebook users hold ebooks in esteem. For libraries, and as documented by Courant and Nielsen (2010), ebooks are less expensive to own, circulate, maintain and preserve than print books. Cost/use data from UIUC have shown that ebooks are also cost-effective purchases for libraries. For patrons, ebooks offer the value of accessibility, availability (24/7), portability and search and navigation capability that enhances access. In quantitative responses, ebook users were overwhelmingly positive about the value of ebooks (with nearly 70% reporting the ebooks they used were either needed or would be nice to access).

However, this study looked more closely at qualitative comment boxes that directly followed survey participant’s quantitative responses to ebook value questions. Despite the positive quantitative response, comments were found to be 45% negative, 36% positive and 19% not clear.

Survey participants reported that, despite acknowledging the value of ebooks, there is room for improvement in the ebook format. Ebook issues mentioned in comment boxes included, but were not limited to:

- Non-standard downloading policies;
- Non-standard cut and paste capabilities;
- Confusion about availability and accessibility;
- Inadequate discovery tools;
- Other sources provided the same information in easier or more accessible ways;
- Content out of scope or out of date.

Why did survey participants share a majority of negative comments immediately after giving high marks to ebooks and quantifying them as important to own/access? Comment boxes offer participants the opportunity to answer the questions that the survey did not ask. This particular set of two survey questions was extremely broad, asking simply, “Please elaborate” for one comment box, followed immediately by “Your eventual other comments with regard to this information search and logbook.” Both questions opened the door for participants to express responses to what they wished they had been asked, perhaps not about value or esteem, but about more practical experiences such as accessibility and relevancy.

Comment boxes allowed participants to express qualifications with their quantitative responses, and it is critical to the overall survey analysis to read and carefully code these data. What the qualitative responses tell us is not that the quantitative data are not correct, but that participants also wished to share their thoughts and experiences, both positive and negative. And, after analyzing the entirety of the survey data, we can learn a great deal from these ebook users.
They value and esteem ebooks, but they also want us to realize current ebook limitations and work to correct the problems.

Overall, the conclusions from this ebook study, incorporating all the three methodologies, are good news for libraries. They point to outcomes that many libraries are already focused on, namely improving ebook collections in scope, number and discipline (to address the relevancy issues) and addressing access and technological issues by creating standards for downloading, cut and paste capabilities, indexing and linking. These are not easy tasks, but it’s good to know that our users are just as aware of the distance we still have to go in order to migrate more cohesively and completely to ebooks.

References


Quantitative/Qualitative Analysis of Assessing Student Information Literacy Skills: The Power of Librarian-Faculty Collaborations

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Abstract: Librarians at the Moore Library of Rider University conducted a focus group with 12 undergraduate students during the summer of 2011 and modified an online test used for determining students’ information literacy (IL) skills in required composition classes. Based on collaboration with a Psychology faculty member, the librarians revised the pre-test with multiple correct answer questions. For those classes returning several weeks later for a follow up session, a different, but similar post-test was given. The multiple-answer format decreased chances for guessing, and the pre and post-tests show learning and/or retention of some of the IL skills taught.

Keywords: librarian-faculty collaboration, information literacy, assessment, pre-tests, post-tests, multiple correct answer questions, focus group, quantitative analysis, qualitative analysis

Introduction

Librarians at Moore Library, Rider University, in New Jersey, USA, have been conducting assessments of student information literacy (IL) skills in a variety of ways since 2002. In recent years, Google Docs have been employed to conduct online tests given to students prior to library instruction (“pre-tests”). This has made it possible to collect data and to conduct descriptive statistical analysis of the baseline measure of students’ information literacy skills across disciplines and class years. Since the Fall 2010 semester, Moore librarians have conducted pre- and post-tests in required research writing classes (primarily freshmen and sophomores) and freshmen honor classes. These tests occurred prior to teaching sessions guided by the IL learning objectives set by the Association of College Research Libraries (ACRL) (2000) for college and university students. The pre- and post-test questions assessed the first two ACRL IL objectives:
1. Students will identify a variety of types and formats of potential sources of information. (ACRL IL Standards 1.2)

2. Students will recognize controlled vocabularies; illustrate search statements that incorporate appropriate keywords and synonyms, controlled vocabularies (when appropriate), Boolean operators, nesting of terms, and truncation, refining the search statement when necessary; and determine the most appropriate resources for accessing needed information. (ACRL IL Standards 2.2 & 2.3)

At a University faculty development workshop before the spring semester in 2011, faculty members from a variety of disciplines reviewed the results of these skills exhibited by students and offered suggestions for changing the wording of questions. These minor changes in the online test were implemented during the spring 2011 semester. A focus group of students during the summer 2011 provided more reasons to refine the questions. By partnering with a Psychology faculty member in fall 2011 who has expertise in test instruments and access to sophisticated statistical software (PASW 18), librarians experimented with a new test instrument that includes multiple correct answers to questions. More in-depth quantitative investigations of the data have been possible with this partnership. In this study, the authors will discuss how the librarian-faculty team developed the test instruments for the pre- and post-tests in fall 2011, the tools used for the statistical analysis, the main findings of the study, and new strategies for future research.

Methodology

Ten online questions to determine basic information literacy skills were administered in required composition and honors level writing classes in the fall 2011 semester. Students supplied the last four digits of their Rider Identification Number at pre- and post-testing so comparisons to determine students’ retention or learning were possible. This method also preserved the confidentiality of the participating students. The Rider University Institutional Review Board reviewed and approved these procedures. The tests were installed in Google Docs and embedded in the Library homepage as described by Hsieh and Dawson (2010). To save the limited class time for instruction, only the early arriving students took the surveys and the surveys were closed 5 minutes after the classes started.

After reviewing the online IL test results with our co-author in the Psychology Department at the end of spring 2011, it was decided to conduct a focus group composed of undergraduate students for their feedback on the test questions for additional modifications on the instrument. Student volunteers received and signed an Informed Consent Form, Student volunteers were elicited by reaching out to several faculty and staff members, plus flyers announcing the project were placed around tables in Moore Library. In August
In 2011, twelve students participated in the focus group by taking the online survey and discussing each question afterwards. One librarian led the discussion and two other librarians took notes while students discussed their responses. Moore Library provided lunch and a $10 gift card to the campus bookstore for these volunteers. This activity helped the librarians to revise some of the questions, and it provided a learning experience for the students. Also, at the suggestion of the Psychology faculty member, librarians experimented with adding multiple correct answers to the questions to decrease the chances of correct responses due to guessing (Moore Library, Rider University 2011, A Few Questions).

In addition to modifying the questions for the fall 2011 semester, Moore librarians provided the answers for the pre-test with explanations to students. The answer sheet was emailed to the faculty with requests to distribute the information to the students. It was hoped that the IL concepts would be reinforced by allowing students to review the correct answers. To minimize the possibility that students might remember the pre-test questions and answers and therefore skew the results for the post-test, a different set of questions was created covering the same IL objectives for the post-test (Moore Library, Rider University 2011, Follow-Up Survey). Only the classes returning for follow-up sessions took the post-test. The data were exported to MS Excel and tabulated for descriptive analysis. SPSS and PASW 18 were used for quantitative analysis to determine if there were statistical differences and interactions among the factors.

Findings

The questions with multiple correct answers made the scoring more complicated. Several algorithms were considered as employed by Bauer, et. al. (2011). The main analysis reported here used a conservative scoring rule in which all correct responses must have been selected and no incorrect responses selected for a score of correct. Any error of commission or omission resulted in a score of incorrect for that item.

One hundred eighty-two CMP-125 students took the pre-test survey. Out of the sixty-nine students who took the post-test survey, fifty-six students (81%) had matching codes in the pre-test. Analyses comparing the full sample to the 56 students who completed both the pre-test and post-test indicated no significant differences were detected between these groups.

There were no significant differences between pre-test and post-test scores overall, $t(55) = 0.24$, $p > .05$, $d = .03$. However, scores did change significantly for each learning objective. For Objective 1, scores declined significantly from pre-test to post-test, $t(55) = 2.12$, $p < .05$, $d = .28$, whereas scores increased significantly for Objective 2, $t(55) = 2.12$, $p > .05$, $d = .03$. This indicates that students learned much about searching skills but not about identifying a variety of sources. Significant increases were noticed in Questions 1 and 9, and significant decreases were noted for items 2 and 5 (see Figure 1).
To further analyze the changes in knowledge from pre-test to post-test for each item, an analysis was done to determine the numbers of students responding (a) incorrectly on both the pre-test and post-test (No No), (b) incorrectly on the pre-test but correctly on the post-test (No Yes), (c) correctly on the pre-test but incorrectly on the post-test (Yes, No), and (d) correctly on both tests (Yes, Yes). Figure 2 provides a systematic analysis of these performances for each question. It is notable that as many students changed from a correct response to an incorrect response (n = 112) as from an incorrect to a correct response ("learning"; n = 116).
The values in Figure 2 provided the raw data to compute learning and retention rates for each question. Learning was defined as the percentage of students that responded incorrectly on the pre-test who responded correctly on the post-test. Retention was computed by dividing the number of students who responded correctly on both tests by the number that responded correctly on the pre-test. Figure 3 (below) shows the percentages of students who “learned” and “retained” the information for each question. Given that these are the goals for each pre-test group, the ideal is for each percentage to approach 1. Figure 4 shows the learning and retention rates for each learning objective and overall.
Analysis

The results indicate several problem areas that students have with some basic information literacy concepts. The function of the online catalog is not well understood because 84% of students in the pre-test thought full text articles could be found by using this tool. After instruction, many students seem to confuse the journal databases with the online catalog and did not know which tool can help them find journal articles. The use of encyclopedias is not understood, and many students do not know the distinction between popular and scholarly publications. The journal holdings tool is a Rider specific device to locate full text journal articles in the subscribed databases and availability in print format. Post-test scores declined on this question, and it confirms that students have the wrong impression that such articles can be found in the online catalog. The scores on subject searching improved after changing the wording from “subject” to “subject keyword” in the pre-test. However, students still have difficulty understanding this concept. Students find it easier to know how to use the Boolean connector “and” than the “or” connector. Students improved in their understanding of the truncation feature when searching databases. Most students did not consider books for research even if it is appropriate.

Limitations

Because the specific components of research instruction depended on the nature of the course assignment, not all IL concepts in the surveys were addressed evenly or adequately in each session. It seems that some gains were canceled by other losses. Additionally, some of the pre- and post-test questions do not have equal number of correct answers and the chance responding rate is
not equal in both tests. For example, Question 8 for the pre-test required only a single response (chance = 20%), but the post-test required a multiple-response for correctness. Thus, the post-test score is most likely biased downward relative to the pre-test score. Thus, the difference between the pre-test and post-test scores maybe significant (see Figure 1).

Conclusions

The surveys revealed that many of our students don’t know the purposes of different types of sources and search tools (databases vs. the catalog; books vs. journals vs. magazines, etc.). As a result of the data analyzed from these results, the Moore librarians are making a number of changes for the spring 2012 semester. First, the librarians have created a Research Guide including the common types of information sources and the purposes of each type for the 2012 spring semester. Instruction librarians have been asked to emphasize the different functions between the online catalog, databases, and Journal Holdings in their sessions. An Excel spreadsheet has been posted for librarians to mark the objectives taught in these composition classes to determine if the skills are being taught uniformly in all of these classes. If learning objectives tested are not taught during these sessions, then there might be a negative consequence on the post-tests. The chart will help determine what is being taught and the weight of the IL concepts. Secondly, two CMP-125 faculty members will ask their students to preview the Research Guides for their research instruction classes and will give a quiz (designed by the faculty) to students that will count for 10% credit. These activities are planned to occur before students come to the information literacy session. These classes will each attend a follow-up session so that the post-test can be given, and the post-tests will be compared with those classes not involved with the preview of research guide and graded quiz (control groups). It will be interesting to see if there will be a difference between these groups.

Thirdly, a performance assessment will be used in two CMP-125 classes this spring that will involve active engagement for narrowing a broad topic and using search strategies to create search terms (Boolean connectors, truncation, phrase searching). This activity will give clues to students’ understanding of these objectives.

With regard to the survey instrument, the questions have been changed to keep the chance responding rates equal for all questions, and to ensure that pre- and post-test questions for the same concept have similar structures. In addition, the tests indicate the number of correct answers (two) for each question. It is important to maintain the sequence of questions covering the same concepts on both tests to facilitate the analysis of the data.

The last change for the spring 2012 semester involves the answer sheet. Instead of giving these answers to the professors, they will be handed out to students at the end of the first research instruction session. This guarantees that
the students receive this information because there was evidence that the answers were not distributed to students the prior semester.

This research will continue to investigate different teaching methods and other procedures to enhance students’ information literacy proficiencies.

References


Moore Library, Rider University, (2011). A Few Questions about Information Literacy for Fall 2011 Semester. available at https://docs.google.com/spreadsheet/viewform?formkey=deEFHM2ZEkRsdVZvMVNaeTVoSFiwZ1E6MA.

Total Quality Management in Academic Libraries – Best Practices

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Abstract: Quality Management is one of the management challenges in libraries. The quality of the service provided makes the difference between academic libraries and other information service providers. There are a variety of quality management projects – mainly in public – libraries in Germany of which some will be introduced in this paper. Best practices in two academic libraries reveal how Total Quality Management (TQM) can be implemented and established in the day-to-day management of libraries successfully. A modern leadership style – for example the transformational leadership – is required for the implementation of Quality Management in a library becoming an effective strategic goal and a management philosophy.

Keywords: Total Quality Management, Quality Management Project, Quality Management Coordinator, Quality Management Group, Complaint Management, Process Optimization, Performance Indicators, Leadership, Transformational Leadership, Academic Library

1. Introduction: Quality Makes the Difference

Nowadays academic libraries need to be ahead of other information service providers to ensure their existence. They need to know their users’ needs and wishes, have to work effectively and efficiently, and especially should be able to anticipate the future of information services and management.

For all this quality should be one of their strategic goals!

But it is not always necessary to introduce a Quality Management System completely and to get certified. A first step might be the implementation of a complaint management system or to analyse and improve separated operational key processes.

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This paper introduces some examples of quality management projects in Germany and explains the first steps of Quality Management in two academic libraries. A special focus is given to a leadership style recommended when implementing Total Quality Management in libraries.

2. Quality Management Projects in Germany

There are quite a few Quality Management Projects in Germany, such as:

- The EFQM-based certificate “Excellent Library”, a project which started in 2008 as a cooperation between Stuttgart Media University (HdM) and the specialist department for public libraries in Stuttgart together with seven pilot libraries, of which three are certified by now (Vonhof, 2011).

- The EU-funded quality management project (which also started in 2008) “Establishment of a QM-Network of Public Libraries in Sachsen-Anhalt” of 20 libraries of the federal state Sachsen-Anhalt, where quality criteria were developed for the future quality norm for public libraries in Sachsen-Anhalt (Landesverband Sachsen-Anhalt im Deutschen Bibliotheksverband e. V., 2012).

- The quality assurance and certification procedures for public libraries in the federal state Niedersachsen to reach a certification and with this the seal of quality “Library with Quality and Seal”, a project of the government together with the municipal library centre Niedersachsen with 23 certified libraries so far (Büchereizentrale Niedersachsen, 2012).

- The section “Quality Management” of the consortium of art and museum libraries which offers since 2007 a Quality Management System with round about 80 subject-specific quality standards for libraries (AKMB, 2012).

3. Quality Management in the Medical Library of the University Medical Center Hamburg-Eppendorf

The Medical Library is a division of the University Medical Center Hamburg-Eppendorf with 30 employees working on 24,5 positions.

The Medical Center’s top management decided for the ISO 9001 certification for its Medical Library in 2009. Furthermore, the idea of Quality Management in this library was deepened through two theses supported by the Hamburg University of Applied Sciences (HAW Hamburg) at the department “Information”:

- In 2010 a diploma thesis „Concept for the Implementation of a Complaint Management for the Medical Library of the University Medical Center Hamburg-Eppendorf”.

- In 2011/2012 a bachelor thesis „Performance Indicators for the Quality Management system of the Medical Library of the University Medical Center”.

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The certification process at the library demonstrates what can be achieved in a very short time period when the implementation of Quality Management is followed through. Excerpts from the two theses will show what can be done to gain a Total Quality Management approach.

### 3.1 DIN EN ISO 9001 certification

This library had a period of nine months to implement a Quality Management System and to prepare every document needed for the Quality Manual. For this a Quality Management Coordinator who is responsible for the Quality Management in the library was appointed by the director and a Quality Management Group was established (s. Fig. 1).

The Quality Management Group consists of four members. Everyone of the library staff – independent of the department or team and of the status as certified or as assistant librarian – can be a member of this group. The only precondition is to be in the group for at least one year. This project group is now a fixed working group which meets every second month to discuss working processes and complaints of users.

To be prepared for the external audits in connection with the certification process and to know what was needed to be done during the nine months an internal audit with the support through an “external” expert of the university hospital, working in the department “Quality Management”, was held.

The library wasn’t ignoring quality before the process – as no other library does – so that they could represent some of their older projects, such as the implementation of an e-learning platform and the “Medi-Treff”, a medical training centre for the individual skills and competences of the Medical Faculty of Hamburg University, which is now located in the Medical Library.

New was the Quality Manual, for which every project and every working process needs to be described in detail and with data flow diagrams as well as an annual Quality Development Plan with the quality goals for the following years (s. Fig. 1).

After nine months the Medical Library was, as part of the University Medical Center Hamburg-Eppendorf, certified.
3.2 Complaint Management

Even without a professional Complaint Management problems and complaints from users are recognized by every member of staff and will be dealt with as soon as possible. But as there are no special channels implemented for the users to hand in their problems and complaints there is no possibility for a comprehensive documentation of the different problems and complaints for a later analysis and evaluation.

A new concept was developed by a student from the Hamburg University of Applied Sciences (HAW Hamburg), department Information, as his diploma thesis.

One aspect of this concept is the establishment of a contact person for Complaint Management for the members of staff as well as the users. Also complaints service points both physical in the library and virtual on the homepage are intended. This should be followed by the publication of information concerning the Complaint Management on the homepage.

For the complaints and wishes of the users of this library a comments and complaints card was designed as can be seen in Fig. 2.
Fig. 2 Comments and Complaints Card for the Medical Library (Bocklage, 2012)

After a complaint manager has been appointed the next step will be the implementation of software to collect and manage the user’s complaints.

3.3 Performance Indicators

To improve their quality management this library submitted a request to the department “Information” at the Hamburg University of Applied Sciences (HAW Hamburg) for a bachelor thesis. First step was a workshop with the library’s management and the Quality Management Coordinator to discuss the quality goals of the library. In reference to these goals recommendations for performance indicators were made, such as “Number of document downloads” and “Percentage of unsuccessful document requests” (Gyaurova, 2012).

4. Quality Management in the University Library of the Helmut-Schmidt-University

In the University Library of the Helmut-Schmidt-University – University of the Federal Armed Forces 45 employees are working on 34 positions.

As a new aspect of this library’s Quality Management a project for a Quality Management based process optimization was started and the first process to be analysed was “Monograph Acquisitions”.

The complete process was described in detail and with a data flow diagram as can be seen in Fig. 3.
This process analysis included that the staff needed to fill out a process slip to find out how long the complete process “Monograph Acquisitions” as well as parts of it took (s. Fig. 4). These results were analysed and gave first ideas for the optimization of the process.

A process optimisation project might raise concerns and fears with employees. As a consequence the working style and even processes might be adjusted during the time of the project leading to distorted results.

Potential solutions might be:

- to talk about “process recording” instead of “optimization” or “quality management” in the first step (Schumann, 2011),
- the intensive communication about the benefit of the process analysis,
the integration of the team members from each affected department as experts for this process, and

to engage an external expert as a neutral person.

5. Conclusions: Transformational Leaders for TQM

Quality Management is a sensible subject, as people have – amongst others – to describe their job and everyday tasks in detail so that everybody can see what they are doing (or not?) throughout their working time. Team leaders as well as a Quality Management Coordinator and an external consultant (s. chapter 3.1) have to establish trust and demonstrate an open interest in the work of those that are asked to support the quality management process. Members of staff are experts in their field of work and have to be respected in this.

Team leaders should be role models for their team members and in this role be the first to give detailed information about their own working processes. They should also present and accomplish their ideas about changes which help to develop higher quality openly. Also they should be the first to work in the new processes and ask their team members to follow them to give them a chance to see how good the new working processes are. For sure, they have to be convinced of the changes and their beneficial impact on quality themselves.

Team leaders operating on the basis of the Transformational Leadership Style will be successful in Quality Management, as they know the importance of (Podsakoff/ MacKenzie / Moorman / Fetter, 1990):

- Identifying and articulating a Vision,
- Providing an Appropriate Model,
- Fostering the Acceptance of Group Goals,
- High Performance Expectations, and
- Intellectual Stimulation.

Fig. 5 illustrates how the Transformational Leadership Style supports the implementation of Quality Management in a library.
Fig. 5 Aspects of Transformational Leadership in accordance to Quality Management

References


Listening to Our Students: Enhancing Library Instruction Through a Qualitative Assessment of Student Feedback

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Abstract: In our ongoing effort to foster a culture of customer service excellence, Texas A&M University Libraries uses LibQUAL+ to conduct annual reviews of service quality as measured by those who matter most; our patrons. This yearly practice reflects our belief that, “only customers judge quality … [and that] … all other judgments are essentially irrelevant.” (Zeithaml, Parasuraman, and Berry, 2006). In an attempt to apply this philosophy to library instruction the authors examined approximately 25,000 post-instruction questionnaires collected from undergraduate and graduate students between 2005 and 2010. Free-text comments from the questionnaires were transferred to ATLAS.ti and the data was coded to identify common themes, patterns and issues across a range of demographics.

This study had two aims. Our first objective was to capitalize on the rich source of qualitative data that student feedback provides as a basis for the development of instructional training programs. This is in contrast to the typical situation in which librarians, reflecting in isolation, seek to improve only their own instruction sessions. Using student feedback at a programmatic level, however, introduces a new dynamic; peer-to-peer learning. This simple initiative, we argue, takes the use of qualitative data to a new level and, in doing so, represents a significant advance in the training and development of instruction librarians. Our second objective was to expand and enrich the discourse on the scholarship of teaching within bibliographic instruction. We feel there should be a greater consideration within the literature of other voices, especially those of our students.

Keywords: Library Instruction, Assessment, Student Feedback, Questionnaires, ATLAS.ti, Qualitative Research, Academic Libraries, Students, Customer Service
1. Introduction
The Texas A&M University (TAMU) campus resides in College Station, Texas and is centrally located to the major cities of Houston, Dallas and Austin. The University is home to over 50,000 students and 5,000 faculty members and ranks as the sixth largest university in the United States. Texas A&M is classified as a Carnegie Doctoral/Research University-Extensive institution and has designations as a land-, sea-, and space- grant institution.

The TAMU Libraries is comprised of five facilities on the College Station campus, as well as one international facility in Qatar. Total holdings include over 4.5 million printed volumes, and approximately 900,000 e-books, 67,000 electronic serials, and 900 databases with a yearly expenditure of approximately $40.1 million for both print and electronic resources. In 2011, the University Libraries served a total of 3,271,402 physical users and 3,260,168 web visitors. Ranked 18th amongst fellow Association of Research Libraries in 2010, Texas A&M University Libraries strives to continually seek opportunities to assess and enhance services provided to the campus community.

As part of the Libraries’ commitment to a university-wide focus on integrative and lifelong learning, the teaching and learning mission of the Libraries’ Bibliographic Instruction Program directly supports the information literacy, critical thinking, and life-long learning needs of Texas A&M students. Subject librarians and select staff at the TAMU Libraries participate in an extensive program of course-integrated instruction, as well as general outreach and instruction activities in the form of basic classes, tours, and campus-wide orientations. On an average year library instructors provide approximately 535 instruction and orientation sessions to over 23,000 students.

2. Literature Review
Assessment of bibliographic courses in academic libraries has been a common practice to determine the effectiveness of information literacy. Many higher education institutions have adopted the Association of College and Research Libraries (ACRL) Information Literacy Competency Standards for Higher Education to structure and develop adequate bibliographic instruction. Samson and McLure (2007) state, “assessment can identify learning outcomes and effective pedagogy: did students learn what was intended and how could the delivery of instruction be approved?” (p.11). The perception of the students and how they relate to an information literacy session can contain insight into improvement, measurement, and learning outcomes in an academic library setting.

There has been a shift in emphasis from inputs and outputs as measures of institutional effectiveness, to users and outcomes for improvement of quality learning and instruction (Tancheva, Andrews & Steinhart, 2007; Rabine & Cardwell, 2000). Libraries still conduct the standard practices for assessment to meet accreditation requirements, however, the question remains: Are students
receiving quality information from their bibliographic sessions? Wilder (2005) argues that “the library must do a better job of reaching more students, more often.” Through assessment of qualitative data and comments directly obtained from the students themselves, insight into perceptions and personal learning experiences can be utilized to improve instructional information literacy sessions to reach more students.

3. Objective
The purpose of this paper is to report on the preliminary results of our qualitative analysis, as well as discuss next steps for further study and data analysis.

4. Methodology
Participants
This study focuses on feedback forms that were completed by TAMU students during five school terms covering the period of August 31, 2006 through August 31, 2011. The students attended an instruction session conducted by library faculty or staff on the TAMU College Station campus located within one of our five library facilities. A total of 28,942 feedback forms were collected and entered into a data management system. From the respondents, a random sample of 637 feedback forms was analyzed. The online tool Random Number Generator provided through www.random.org was used to calculate the random sample from our population. The sample size was determined using a Confidence Level of 99% and Confidence Interval of ±5%.

The sample population is presented under Figure 1 illustrating the percentage of respondents by school year and the percentage of respondents distinguished by classification. Note that each school year covers September 1st through August 31st. From the feedback forms sampled, 55 library instructors were identified and 43 majors/programs were represented amongst the respondents.

Figure 1. Sample Population
Assessment Tools

As noted above, student comments used in this study were collected using the Libraries’ standardized Student Feedback Form. The distribution of feedback forms is a required component for all in-person library instruction sessions that take place in the library or on campus. Forms are distributed and collected at the end of each session. While not mandatory, students are asked to fill out a form before leaving the classroom and most oblige.

The form solicits basic demographic information such as student year, major, and previous classes attended, as well as both qualitative and quantitative feedback. The quantitative component measures student satisfaction related to session content, instructor delivery, and overall satisfaction using a 10-point Likert-scale. The form also includes a measure for “pace of instruction” with the option to circle either “too fast,” “too slow,” or “just right.” The qualitative component allows students to provide written comments about the session. The comment segment of the form includes the following prompts:

- Was today’s session useful? Yes __ No __ Why or why not?
- What do you wish we had told you more about?
- Please enter any additional comments

The goal of this project was to see if an analysis of feedback across library classes and instructors would reveal any common themes related to student perceptions about the quality and usefulness of the sessions they attended. To do so, only the free-text comments from the feedback forms were analyzed for potential common themes, patterns, and issues across a range of demographics. ATLAS.ti was the assessment tool chosen to help with the analysis. ATLAS.ti is a data analysis software program used primarily for qualitative research. It was selected because of its ability to assist with analyzing and systematizing large amounts of textual data. While the software itself does not perform the actual textual analysis, it enables the researcher to easily track and document themes using a system of codes and code categories.

Data Collection

During the period of August 31, 2006 through August 31, 2011, 28,942 student surveys were completed and entered into the Libraries’ bibliographic instruction database. From these surveys, a sample size of 637 randomly selected records were uploaded into a working spreadsheet for analysis. All data fields in the spreadsheet were supplemented with a main heading plus a colon for clarity when transferred to ATLAS.ti [e.g. Comments: ...]. This technique was necessary for accurate subdivision of data in record entries in the data analysis software.

Once the data was refined for consistency, the spreadsheet file was imported into ATLAS.ti for coding and evaluation of individual comments. Codes were only assigned to textual comments residing in the main headings of Useful:
Why/Why Not, More Info, and Comments. Note that these three main headings are a condensed representation of the three prompts taken from the Student Feedback Forms as listed earlier under Assessment Tools. Record entries were divided evenly between authors and were coded independently. Minor overlap did occur with use of identical codes such as No Comment and Compliment.

All totalled, the authors created 527 unique codes. After the individual coding was completed the authors met to create a list of standardized codes based on the initial 527 unique codes applied to each comment. Sixteen standardized codes were agreed upon. These codes were developed from language and themes predominantly evident in the original coding analysis. Each of the original 527 codes were then analyzed and assigned to one or more of the 16 standardized code themes, resulting in a total of 881 occurrences of the standardized codes applied to comments in ATLAS.ti. The frequency of the standardized codes specifying total number of occurrences is presented in Figure 2. The merging of individualized codes into standardized codes was administered in a spreadsheet format for easier tracking and to provide detailed notes and trends for further analysis of the standardized code themes.

Figure 2. Frequency of Standardized Codes

![Figure 2. Frequency of Standardized Codes](image)

5. Initial Results

To help organize and make sense of the results, the 16 standardized codes were grouped together according to the broader categories of Content, Instructor/Session, Reflective Statements, and Compliment General.
Figure 3. Standardized Codes by Category

<table>
<thead>
<tr>
<th>Code Categories</th>
<th>Content</th>
<th>Instruction/Session</th>
<th>Reflective Statements</th>
<th>Compliment General</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Code: Content Coverage</td>
<td>• Code: Instructor</td>
<td>• Code: Wish knew better</td>
<td>• Code: Compliment General</td>
</tr>
<tr>
<td></td>
<td>• Code: E-Resources</td>
<td>• Code: Session</td>
<td>• Code: Prior Knowledge</td>
<td></td>
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<tr>
<td></td>
<td>• Code: Resources</td>
<td>• Code: Information</td>
<td>• Code: Learned something new</td>
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<td></td>
<td>• Code: Services</td>
<td>• Code: Inconveniences</td>
<td>• Code: More</td>
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<tr>
<td></td>
<td>• Code: Research Process</td>
<td>• Code: Classroom</td>
<td>• Code: Feel more confident</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Code: Course Materials</td>
<td>technology</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Content

Six standardized codes were grouped together to form the category content. This category represents the sum total of 338 applications of the specific code occurrences noted below:

- Content Coverage (48)
- E-Resources (107)
- Resources (24)
- Services (39)
- Research Process (96)
- Course Materials (24)

Forty-eight comments were associated with Content Coverage and included general statements about the amount of material covered during the session. Some concerns were related to the feeling of information overload: “I felt like this was information overload, too much to process.” Other concerns pointed to a lack of information provided or a wish for more information on certain topics. Positive comments associated with content coverage included general statements like, “Well presented with sufficient depth” and “You basically touched on everything.”

Feedback that mentioned library services and resources, by name or in general, were assigned the codes Services, Resources, and e-Resources, with comments related to e-Resources (107) substantially outnumbering Services (39) and Resources (24). This was no surprise given most instruction sessions focus on the wealth of electronic resources available to support student research projects. The introduction of databases in class was noted by many students as particularly useful. For example, “It’s good to know where to go to access information via reliable databases” and “Never heard of these databases before!” A number of databases were named as examples of what students found most useful about the session such as Ebsco, ERIC, JSTOR, Endnote and Refworks, the Libraries’ catalogs (Chiron and LibCat), and Google Scholar. Additional comments noted a wish for more information about specific e-resources, particularly databases. Other comments of note associated with e-resources related to citation software and citation features within databases.
Students either expressed a desire for more information about these particular types of e-resources or, conversely, they commented on their usefulness. For example, the comments ranged from “learned how to save articles, citation format,” to “the citing information was very helpful,” and “Refworks is awesome!”

Ninety-six comments included mention of various activities related to the research process and were coded accordingly as Research Process. Positive comments included “how to” statements such as “learned how to navigate through the libraries system” and “learned how to search efficiently.” Other Research Process comments related to the usefulness of in-depth search tips, help with search strategies and efficient search techniques, step-by-step search demonstrations with relevant examples, tips on how to find scholarly sources, and help with how to cite material. These same themes also emerged as stated concerns or suggestions. For example, one student remarked, “If you are going to present a tool be more practical with it’s [sic] use.” Other suggestions included, “Show an example of where to find primary source documents” and “Give example about how to use resources in detail.”

Last, the code Course Materials which was applied 24 times included mention of handouts and online research guides. On the whole, students indicated that the use of handouts and online guides were of value. Their comments were expressed as either a concern that no supplemental material was provided or as a complement in that the supplementary material received would provide them with further assistance after class.

Instructor/Session

Five standardized codes were grouped together to form the category Instructor/Session. This category represents the sum total of 319 applications of the specific code occurrences noted below:

- Instructor (44)
- Session (110)
- Informative (137)
- Interactive (14)
- Classroom Technology (14)

Forty-four comments were associated with the code Instructor and included statements about the individual teaching the class. Almost all of the comments associated with this code were positive in nature. At a general level, there were many comments like “good job”, “great instructor”, “awesome instructor”, as well as remarks related to instructor attributes like their friendliness, helpfulness, and even loveliness. More specifically, students commented about the quality of the instructor’s delivery and overall expertise. One student exclaimed, “[instructor name removed] is an expert in this field, she has truly helped me in my time at TAMU!” Other students remarked on presentation style
such as “instructors exciting and knowledgeable” and “instructor did well in
presenting and explaining.”

The 110 comments associated with the code Session were very similar in nature
to the comments associated with the code Instructor. Here, however, emphasis
was placed more generically on compliments and concerns related to the overall
instruction session rather than the specific instructor teaching the session.
Again, at a general level there were many complimentary comments like “great
session”, “good session”, and “amazing”. More specifically, students remarked
about the session being very helpful. For example, “this presentation was very
helpful, I was very impressed.” There were a few comments expressing
concerns about the session. Largely, these comments tended to focus on the
pace of the session being too fast or too slow.

Three additional codes were assigned to comments that fell within the category
Instructor/Session, namely Informative, Interactive, and Classroom Technology.
Each of these codes touched on more specific themes about the quality of the
sessions attended. There were 137 comments associated with the code
Informative. These comments were all complimentary in nature and focused on
the usefulness of the session because it was either considered “informative”,
“informational” or “educational”. Comments ranged from “she gave information
that was helpful” to “this was a fabulous and informational session.” The 14
comments associated with the code Interactive were expressed as either
compliments or suggestions for improvement. For example, “I liked that you
asked about our specific industries and tried to use those throughout the
presentation.” Suggestions included, “try to get the students attention more,
more interactive” and “maybe a little more interactive to enhance attention from
students.”

Finally, there were 14 comments associated with the code Classroom
Technology. Some students commented on the usefulness of having computers
during the session, such as “I liked how we all had computers during the
presentation” and “using computers or laptops would be helpful so the students
would be able to search” and “I would like to be on a computer learning this
because I would remember better.” There were also a few comments about
technology problems that occurred during class. Of particular note were the
student suggestions for better preparation in order to deal with technology
glitches: “Be prepared, the poll thing was cool but it didn’t work right!” and “I
think before class starts make sure that all the computers are connected.”

Reflective Statements
Four standardized codes were grouped together to form the category Reflective
Statements. This category represents the sum total of 138 applications of the
specific code occurrences noted below:

- Wish Knew Before (14)
• Learned Something New (64)
• Prior Knowledge (42)
• Confidence (18)

What set these coded comments apart from others were their more personal tone and reflective nature. Many of the comments began with “I” statements or included a “me” statement somewhere in the text (“I wish”, “I learned...”, “...helped me to...”). The code Wish Knew Before was applied to comments where students intimated the knowledge gained during class was new to them and would have been useful to have known already, either earlier in the semester or earlier in their student careers at Texas A&M. Comments included such laments as, “The presentation was very informative and helpful. I didn’t know any of this before. It would be beneficial to have more information on database and research sources presented to freshmen as part of their classes. I would have loved to have known this as a freshman” and “I wish I would have known this earlier in my college career.”

The codes for Learned Something New and Prior Knowledge were applied to comments where students indicated having at least some level of library or research knowledge prior to attending class. These two codes were somewhat similar in nature. Both were associated with student comments, expressed either directly or indirectly, that indicated some of the material covered in class was considered “common knowledge”. The 64 comments associated with Learned Something New included general positive statements from students about having literally “learned something new” during the session. Some students provided more specific comments about the discovery of new resources and information: “I didn’t realize there were all these sources for landscape.”

The 42 comments associated with the code Prior Knowledge more directly pertained to students who either positively remarked that the session in some way helped to build on what they already knew or more negatively remarked that the session did not provide them with any new knowledge. Some positive remarks included, “helped solidify my knowledge of how to use library resources”, “I have heard this information before but hearing it again is helpful” and “refreshed my memory of all the different services the library has to offer students online.” Conversely, others expressed concern about having attended previous sessions, “I have seen it twice before.” Yet others remarked the information presented was nothing they didn’t already know, “I’d already discovered most of these through my own researching, so there wasn’t much new material.”

Finally, the 18 student comments associated with the code Confidence all evoked a personal and emotional component about the process of conducting research and using the library. Some comments were an expression of relief. One student talked about feeling more comfortable, “I feel a bit better about using the library/being comfortable with it.” Two others used the term
confident: “I feel very confident to use the library and website. Thank you very much.” “Made me feel more confident about researching using databases.” Other comments expressed anxiety. For example, “It looks easy when watching, but hard to find on own.”

**Compliment General**

The category for Compliment General represents a total of 86 applications of the single code Compliment General. Comments in this category included short statements like “this was great” “thanks”, “thank you”, “:)", and “awesome”. While the comments in this category did not yield much in the way of specifics, they did indicate overall satisfaction with having attended a library instruction session.

6. **Next Steps**

The preliminary findings have provided the authors with a starting point for further research and analysis. Further study will be conducted to examine comments and codes from the sample population according to user group demographics to see if any themes emerge. For example: Are certain standardized codes or themes associated with first year students that are not present for fourth year+ students? What about the differences between undergraduate students and graduate students? Etc. If relevant themes do emerge, are there any implications for the delivery of instruction? Further, as instruction programs increase their reach from year to year the likelihood for “repeat” customers rises. Is there anything we can learn from this particular user group?

The comments coded under the Reflective Statements category are also of particular interest to the authors. These comments referenced personal and emotional statements in regards to the information provided in the students’ bibliographic session. Although only 18 occurrences of the sample comments were coded as identifying with Confidence, the authors would like to explore this further with additional survey tools or focus groups. A student may walk away from a session with more knowledge of the library and its resources, but the question remains - do they feel confident to successfully find the information they are looking for on their own?

Further, the authors would like to consider using the feedback received to potentially revise the feedback form itself. Identifying purposeful responses to our services will allow for revision of the form. To encourage completion of the three free-text prompts, the authors suggest verbally stating the importance of these questions and encouraging student engagement while distributing the forms during the instructional session.

Finally, the initial results will also be compared to TAMU Libraries LibQual+ data to look for similar trends and/or discrepancies with regard to feedback from the student population. In doing so, the authors believe they will have a broader
understanding of student perceptions of the library and the process of conducting library research.

7. Conclusion
This study has provided justification for further research, as well as regular analysis of student feedback comments at the programmatic level as part of the Libraries’ overall assessment toolkit. It is important to note that at the time of this study, only quantitative feedback was being used at the programmatic level to analyze indirect student learning outcomes and thus meet the University’s accreditation standards and guidelines. Library Instructors, however, were regularly reviewing their own student feedback comments in an effort to modify and improve their individual classroom sessions.

What do the student feedback results mean for library instruction programs in general? How can we apply what we have learned to bibliographic instruction training programs? Based on the findings thus far, the authors recommend several activities to help enhance the quality of instruction in the classroom:

- Engage in a yearly assessment of student feedback at the programmatic level.
- Disseminate results to all library instructors for review.
- Hold a yearly meeting to discuss the results with all participating library instructors in order to raise collective awareness of student identified best practices and common classroom concerns.
- Incorporate themes from the feedback results into regular bibliographic instruction training sessions.
- Harness local talent (your library instructors) with relevant strengths to help provide short “tips and tricks” sessions to share successful teaching methods and classroom techniques related to students concerns and compliments. As needed, bring in additional experts to address areas where skills and knowledge may be lacking within the organization.

Sharing student feedback comments across the libraries and encouraging reflection about the quality of our teaching from the perspective of our largest customer group, our students, can serve to enhance our instructional training programs, overall user satisfaction, peer-to-peer learning, and scholarship. The library provides a vast array of services and resources that are utilized daily by the students we serve and it follows that they continually create their own experiences through testing, reviewing, and accessing the resources. Their perception of the library and its products holds value when assessing learning outcomes.

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References


A Review of Secondary Literature on Evidence Based Library Management

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Abstract: A fundamental problem of practical sciences such as librarianship is that theory and practice overlap. Library professionals often find themselves in situations where they need answers to questions that emerge from their professional practice. Librarians need to have evidence on which to base their informed decisions. Evidence based library management (EBLM) is a relatively new concept for librarians. This paper will present a study that explores the way in a review secondary literature on EBLM. In that review will include historical process, important, problems of EBLM and frequently made mistakes about that. Creating an environment in library where an evidence based management is valued and encouraged will be a major factor in improving the quality of the contribution of librarians to their library and to their profession in the long term.

Keywords: library, librarians, library management, decision making, evidence based library management

Introduction

Evidence based library management is one of the most significant contemporary developments in professional library practice. Decision maker librarians need to consider and plan for practical steps that could be taken to introduce the concept of evidence based library management. This process will provide librarians with the information for implementing the crucial first step (Brice, Booth and Bexon, 2005).

EBLM is a new concept in the management literature. Essentially it is a simple idea. It entails finding the best evidence that you can, facing those facts and acting on those facts – rather than doing what everyone else does, what you have always done, or what you thought was true (Lakos, 2007).

If we consider all the studies carried out in the world, from the end of the 1990s, but in particular from the beginning of the 2000s, it can be seen that librarians and information science practitioners endeavored to create awareness of the subject of evidence based library management. Studies published by experts
such as Amos Lakos, Andrew Booth and Jonathan Eldredge and planning set up by organisations such as IFLA have such a purpose. Evidence-based library management provides a context within which to formulate questions which require the gathering of evidence in order to successfully answer the question posed. It is praxis-orientated and provides a practical application of the librarian’s knowledge of the decision making process to facilitate and drive service development (Derven and Valerie, 2011). It is generally accepted that the concept of evidence based practice was first developed at McMaster University in Canada in the early 1990s, broadening out in the mid-1990s to “evidence-based healthcare” (Brophy, 2009). The late 1990s saw evidence based healthcare spread to contiguous fields such as education, social work, human resources management and criminology. An even broader term evidence based practice captures the commonality of approaches across a broad spectrum of professional endeavour (Booth, 2003). The EBLM idea and the appeal which it from the beginning will have had to many reflective practitioners, can best be seen in the context of a growing crisis of legitimation in their environment. EBLM conceptualization, discourse and program as initially introduced to the library profession were directly and deliberately transferred, with a minimum of necessary adaptation, from the health care sector. The compelling idea seems to have been: if such an enlightened innovation can catch on in medicine, why not in library management? (Hunsucker, 2007).

1- What Is Evidence?
For an institution, evidence consists of statistics and results which are obtained from important service-provision sources systematically, using verifiable methods, which have also been processed using standard procedures and converted into information. The institution then examines this information using its own resources and expertise, synthesises it and interpretes the existing situation, procedures and service results. For evidence based library management, the search of the literature in order to obtain evidence in a proper manner is especially important. Therefore, the more detailed the search carried out at this stage, the more successful the process of correctly formulating the question will be.

One problem is that those who wouldn’t do something, will have many different and even conflicting reasons for not doing so, and will in some cases fundamentally disagree with each other on essential points. There are many takes on what evidence is and does, how to get it and to use it, how you classify it into types, how to judge its relevance or its force and how you should accept or ignore it (Hunsucker, 2007).

Apart from the question of what evidence consists of, how it is obtained and how it is used, how it is classified according to types or wider categories and how evidence is accepted or not accepted as evidence are stil problematic issues. For this reason, in the evidence based library system the accurate defination of the word “evidence” appears to be a priority factor for sucessful management. Another problem is that there is not a clear answer to the question of exactly how the results of evidence based research are going to help librarians in their
library applications. For this purpose, Cohen and Crabtree have created a method of evaluation and have stated that the criteria which make up this system generally can also be used in other evaluation studies (Cohen and Crabtree, 2008):

- Having an ethical research policy
- Evaluating the degree of importance of the research
- Having a comprehensive and consistent study proposal
- Using suitable and reliable methods
- Having a well-integrated idea structure
- Judging whether the proposed research study subject contains bias or not
- Judging whether the proposed research study subject is viable or not

2- Evidence Based Management

It would be wrong to think that if management decisions are based on the most solid evidence, that the managers will systematically learn from experience and the company applications will reflect principles based on solid ideas and analyses. The reason for this is that decisions about business tend to be based on hope and fear, trying to do as others do, what the upper-level managers did in the past and believed to be effective and their favoured ideologies—short, based on a lot of unrealistic factors. Although evidence-based practices started in the medical field and later, with some difficulties, entered the field of business management, it has in fact changed the management style of many businesses very little (Pfeffer and Sutton, 2009).

The latest research shows that only 15 percent of the decisions made by doctors were based on evidence. It was observed that doctors generally preferred the old information that they had learned at medical school or trusted traditions and practices which have never been proved (Pfeffer and Sutton, 2000). Managers trying to cure the ailments of their own institutions tend to behave in the same way as these doctors. Managers who are looking for the best solution to a problem also encounter more difficult problems than doctors do: because institutions, in contrast to people, differ from each other from the aspect of size, age and structure, in business life it is much more risky to assume that a “cure” which was developed and tested somewhere else could be applicable in this case also (Pfeffer and Sutton, 2000).

Many managers damage their institutions by importing performance measurements and practices based on their own past experiences, without thinking. For example, a manager who knows that another institution with a different internal structure has a pay structure which works well may make a serious error by expecting that it will have the same effect in a different institution with a different internal structure because, even if they produce the same goods, their target customer group and market and therefore their methods of distribution are completely different. For this reason the company needs to develop its own system of management (Pfeffer and Sutton, 2000).

Frequently Made Mistakes
One of the most frequently made mistakes is random comparison. Both doctors and managers look at people who they judge to have a high performance and try to copy other people or institutions, the result can only be an imperfect copy. In this case, the logical thinking behind the actions of the most successful performers, the reason why these actions are effective and how they will be effective in another situation are almost impossible to understand (Pfeffer and Sutton, 2000).

For example, the secret of the Toyota Company’s success is not, in fact the technology that they use but, on one hand, the integrated high quality management and the philosophy of always trying to improve and, on the other hand, the managers being in communication with the production workers. Thanks to this policy, the Toyota Company can make use of the combined knowledge of the management team and the workforce. Secondly, different companies have different strategies, workforces and rivals. The system at Toyota assumes that their employees are team players and that their egos take second place to the interests of the company. In contrast to most American and European managers and workers, they possess the more cooperative approach to working life of Asian managers and workers (Pfeffer and Sutton, 2000).

One of the strongest and most widespread obstacles to the use of evidence based management is ideology. People’s opinions based on past experiences and practices tend to prevent them from adopting new and different methods of working and cause them to ignore new ways of working. Academics and other leaders of thought tend to be so faithful to their own theories that this prevents them from learning from new evidence. This effect is partly due to people only seeking what they themselves believe (Pfeffer and Sutton, 2009).

Like other leaders, many upper level managers in the field of human resources hold wrong or incomplete opinions. They fall into the trap of second-rate ideas, logic and recommendations and this tendency gives rise to unreliable applications and, as a result, damages both performance and individuals (Pfeffer and Sutton, 2009).

When Peter Drucker was asked why managers tend to follow bad recommendations and not to make use of sound evidence, he replied that “thinking is a difficult task and, rather than think for themselves, following managerial fashions seems like an attractive choice”. In order to apply evidence based management, if you are prepared to think hard enough and you want to gain the advantages which are offered by this method, it is necessary first to pinpoint your blind spots, prejudices and the problem which exist in your company and, discovering the most sound logic and data, to take full responsibility for these things (Pfeffer and Sutton, 2009).

Beck and Manuel list some of the most common errors in research assessment that frameworks help identify. Some of those errors include (Suarez, 2010):

- Not asking the right question or not asking the question in the right way.
- Gathering data at the wrong time or place.
Using unrepresentative samples, or failing to recognize possible response bias among those members of the sample who do respond.

Failing to control for or consider possible experimenter expectancy effects that arise when researchers’ measurements are shaped to match their own hypotheses or expectations.

Not allowing for research biases

Over-generalizing to conclusions not directly supported by the research data.

3- Evidence Based Library Management

**Historical Process of EBLM**

The term evidence based librarianship (EBL) was first introduced into the library and information profession’s vocabulary by Jonathan Eldredge (1997). Two years after introducing the term Eldredge challenged the library profession to establish “a shared definition and vision” for the concept. The first attempt to define evidence based library management emerged one year later when Andrew Booth (2000) adapted a pre-existing definition of evidence based practice. Booth notes that the definition has the “advantage of being coined by a librarian, Anne McKibbon from McMaster University” (Patridge, 2007). In 2002 Eldredge put forward his definition again. At the same year Crumley and Koufogiannakis, stated that the current definitions of EBL were overly theoretical, offered a “practical definition for everyday referral”. The last definition places a greater emphasis on “the improvement of professional practice together with the addition of the librarian as practitioner-researcher” (Patridge, 2007).

For six years the term evidence based librarianship was the accepted term to refer to the application of evidence based practice within the library profession. However, in 2003 Booth and Brice proposed an alternative label “evidence based information practice” (Booth, 2003). Booth indicates that the library and information professional of the future will be a reflective practitioner “with the ability to critically analyse and make informed judgements” by drawing on a range of catalysts, with research evidence representing opportunity (Patridge, 2007).

It did not take long before Booth’s prediction came into fruition. In 2006 the launch of an open access, peer reviewed journal on EBL introduced a new phase to the professional discourse “Evidence Based Library and Information Practice”. In the following year the fourth offering of the biennial EBL Conference series was scheduled to take place in the US in May – the event is significant for many reasons but most notably the move away from the existing EBL title to the new title of EBLIP (Patridge, 2007).

Evidence based practice is now accepted in medicine and healthcare worldwide. In a number of countries, it forms a mandatory basis for practice. It is backed up by a wide range of services, like the Cochrane Collaboration (http://www.cochrane.org/) which provides access to systematic reviews of the...
medical literature. Healthcare practitioners worldwide use these reviews to ensure that they are up to date with latest best practice (Brophy, 2009). Parallels with the Cochrane and Campbell Collaborations, international networks of researchers systematically identifying, analysing and synthesising the evidence, have been drawn on several occasions but remain tantalisingly elusive (Booth, 2003).

EBLM have recently been the subject of wide-ranging discussions, conferences and publications, as well as the focus of continuing professional development opportunities and an EBLM website (http://www.eblib.net). Whether it is called evidence based librarianship, evidence based information practice, evidence based library and information practice or evidence based library management the ongoing dialogue in the profession has clearly established that “research can and does play a vital role in professional practice” (Patridge, 2007).

The seeds of EBLM already exist in the knowledge and skills of practitioners and researchers in the field; however, we have yet to reap the benefits of the sum of parts. Much needs to be done to improve and strengthen the quality of research in the field and our ability to apply it in a meaningful way. We also need to see the knowledge and skills of practicing librarians as resources for evidence-based practice and learn to how to translate this tacit knowledge into best practices scenarios that can be shared for the good of all (Putting Our Knowledge to Work, 2009).

The Gap Between Theory and Practice

A fundamental problem of practical sciences such as librarianship is that theory and practice overlap. Therefore librarians, in particular recent graduates, become aware of a serious gap between theory and practice. Therefore, while experienced librarians are following an evidence based path, new graduates, or those who prefer book-learning, attempt to fill in the gap between theory and practice. A study carried out by Turner shows that very often people doing practical applications complain that the results are in conflict with the theories in the books they have studied. The only good aspect of this problem is that these people, thanks to the problems that they have come across, will be able to contribute to the design of future studies (Turner, 2002).

Straddling this divide, with an uncertain foot in both camps, are the practitioner-researchers. Practitioner-researchers tend to use such designs as survey research, action research and secondary data analysis which are more likely to struggle for acceptance by bona fide academic researchers (Booth, 2003). Over the years proposed solutions to bridge the research-practice gap have included mentors, secondments and collaborative research Networks. Such measures seek to address the organisational and structural barriers while doing little to challenge the prevailing culture of librarianship. Achieving a real difference requires a paradigm shift. Over recent years many have claimed that paradigm is “evidence based practice” (Booth, 2003).

As information professionals, it seems logical that we should recognize the need to create, share and use our own knowledge base in information and library
science; however, this has not necessarily been the case in the past. Like other professional groups, librarians tend to be action-oriented, relying on our own experience and professional judgment to make decisions (Putting Our Knowledge to Work, 2009).

Both the need to make decisions quickly and the lack of a clear connection between much library and information science research and the day-to-day problems faced by librarians make seeking and applying our own knowledge base a challenge. The increasing diversity of library and information science research also makes the development of a critical mass of applied action-oriented research problematic (Putting Our Knowledge to Work, 2009).

Practising Process of Evidence Based Library Management

It is important to recognise that EBLM is not just about the evidence itself, but also encompasses the process by which the evidence is gathered and applied (Brophy, 2009). Proponents of EBLM have contributed to all stages of the process, taking the techniques of the wider paradigm and replicating or modifying them before applying them to their own practice. EBLM emphasises five requisite processes (Booth, 2003).

Step 1 - Define the problem/question: The first stage of EBLM is to focus or formulate your question, which involves converting a precise, yet possibly vaguely expressed, information need from practice into an answerable, focused, structured question (Brice, 2005).

Eldredge comments that questions drive the entire EBLM process. EBLM assigns highest priority to posed questions with greatest relevance to library practice. The wording and content of the questions will determine what kinds of research designs are needed to secure access (Eldredge, 2000).

Step 2 - Searching the Literature: The second stage in the EBLM process requires a comprehensive and thorough search of the literature, to identify evidence relevant to the topic in question. Finding evidence to answer questions in the domain of library science is a complicated task, due to the fact that the evidence base is contained in multiple and varied information sources. This means that information might appear in the literature base of many other disciplines, as well as in the main library and information science databases. This may require searching the management and marketing literature, or the education or computing literature. Also, in terms of research quality, LIS research typically utilises designs of limited applicability, such as the user survey. The most appropriate study design will vary according to the topic under investigation (Brice, Booth and Bexon, 2005).

For the purpose of this study a search of Library and Information Science Abstracts (LISA) was conducted using free text words such as social sciences. Our search was limited to major databases due to access issues and other databases that may also have been useful for our question are the educational sources such as ERIC, ASSIA, INSPEC and Social Science Citation Index (Brice, Booth and Bexon, 2005).

Step 3 - Filtering Search Results: Growing interest in EBLM, encouraging practitioners to base decisions on sound research evidence, has stimulated the development of so-called “methodological filters”. Such methodological search
filters initially arose out of researchers’ concerns in locating “Randomized Controlled Trials” to avoid publication bias, associated with flawed results and invalid conclusions (Booth, 2003).

**Step 4- Appraising the Literature:** Appraising the literature means critical appraisal actually. Critical appraisal uses intrinsic (design) rather than extrinsic (author, journal, institution) factors to help the practitioner decide whether an article is worth reading. The more rigorous intrinsic factors that relate to research design and aspects of methodology are the focus of critical appraisal (Brice, Booth and Bexon, 2005).

In other words we put aside our prejudices regarding the source or nature of a research study and judge it entirely on its own merits. To do this we need to take into account the three important factors of validity, reliability and applicability (Brice, Booth and Bexon, 2005).

**Step 5- Applying the results in practice:** It is important that the final stages of the EBLM process, applying the results and evaluating your performance are followed through. A range of behavioural and educational interventions exist to facilitate a culture of change, which although observed in the health environment, are transferable to other settings, such as audit, accreditation, benchmarking and ongoing evaluation alongside innovation (Brice, Booth and Bexon, 2005).

**Process of Evidence Based Library Management (Barbara and Lee, 2011)**

Thus this figure is the framing of the question and the search for relevant, valid, reliable and applicable evidence to illuminate it which are critical, as is the review of the performance of the application to practice once it has been completed (Brophy, 2009). Therefore it would not be wrong to conclude that evidence based applications in fact consist of a series of processes which replicate and re-enforce each other; those carrying out the applications reflect their own experiences onto the processes and at the same time gain experience.
Conclusion

These external environmental forces necessitate renewed examination of the library’s future as a viable information framework. Jerry Campbell examined a number of possible future roles for the academic library. He stated: Because of the fundamental role that academic libraries have played in the past century, it is tremendously difficult to imagine a college or university without a library. Considering the extraordinary pace with which knowledge is moving to the web, it is equally difficult to imagine what an academic library will be and do in another decade (Lakos, 2007).

The existing standards for measuring management science are very faulty and mostly unuseable. The only way to avoid this faulty information is to, as well as researching successful companies, to study unsuccessful companies and to pinpoint the factors which make them unsuccessful. Also, it would be a useful exercise to regularly do small experiments and make observations and to consider and constantly evaluate the data obtained from these experiments (Pfeffer and Sutton, 2009).

To become a leader of the age, to re-organise, to adopt 6 Sigma or to become an organisation focussed on strategy may be useful for some organisations but there is no single correct path to take for every company. We must accept that there is no magic formula for success. Similarly, there is no need to follow the small number of gurus who disapprove of an excessively simple approach. Prahalad, who heads the list of many lists of gurus, a few years ago closed his address to a large crowd with these words: “If someone tells you that they have the answer, it must mean that they did not understand the question” (Pfeffer and Sutton, 2009).

References


Social Workers in the Library: An Innovative Approach to Address Library Patrons’ Social Service Needs

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Abstract: Social Worker in the Library (SWITL) is a unique program where social workers partner with public librarians to provide information consultation services to the public. The goal of SWITL is to support social justice by expanding access to information regarding local social service programs, especially for the traditionally disadvantaged populations. Evaluation research has been conducted to gather input from both library patrons and library staff in order to determine the efficacy of the program. Findings suggest that SWITL has been a professional and helpful program, while there are still areas for improvement and additional efforts need to be made in response to these suggested improvement and make SWITL a more effective and efficient program in promoting social justice.

Keywords: social service, social work, public library, social worker in the library

1. Introduction

Social justice generally refers to the concept of creating a society that is founded on the principles of social equality and solidarity, that understands, respects and values human rights, and that recognizes the dignity of each human being (Zajda, Majhanovich, & Rust, 2006). Libraries support the idea of social justice in that they strive to provide equal access to information for every member of their user population. Library Bill of Rights clearly state that “A person’s right to use a library should not be denied or abridged because of origin, age, background, or views”, and “Libraries that make exhibit spaces and meeting rooms available to the public they serve should make such facilities available on an equitable basis, regardless of the beliefs or affiliations of individuals or groups requesting their use.” (ALA, 1996).

Public libraries are vibrant community centers, providing free access to a wealth of information, which can be accessed in-person or online. These respected institutions support a wide range of community needs, serving toddlers through
seniors with family literacy programs, homework help and tutoring, job-seeking support, computer access and technology training, and a range of other programs. Each day, thousands of individuals across the nation visit their local library, explore its online resources, and interact with librarians – experts who help patrons find the information they need (Durrance & Fisher, 2003).

Connecting people with the information they need has always been a core purpose of libraries. Many library patrons need access to information regarding local social services available in their community to meet needs such as homelessness and hunger, domestic violence, substance abuse, health and mental health issues, grief and loss, aging-related challenges, juvenile justice and delinquency, and employment. Public libraries offer a unique venue for developing new approaches to expanding access to social service programs, resources, and information. Creating effective partnerships between social workers and public libraries – a universally recognized neighborhood resource – offers new opportunities to meet community needs (Collins, Howard, & Miraflor, 2009).

With those opportunities in mind, faculty from the San Jose State University School of Social Work partnered with the San Jose Public Library (SJPL) and the local chapter of the National Association of Social Workers (NASW), conducted a needs assessment in 2007/2008, and then launched the Social Workers in the Library (SWITL) pilot program in October 2009. The primary objective of the SWITL program is to seek ways to increase access to information regarding local social service programs. Modeled after an existing “Lawyers in the Library” program at SJPL, the SWITL program involves professional social workers, who volunteer their time to meet face-to-face with library patrons for brief consultations. The consultations occur on-site at the SJPL main branch (Dr. Martin Luther King Library, or King Library in short) and focus on providing basic information in response to a patron’s needs, as well as providing referrals to community resources. To date, SWITL patrons have received assistance with social service issues ranging from adoption and foster care, stress in family relationships, divorce, death, and loss, unemployment, homelessness, and recovery from substance abuse. Services have been provided in English and Spanish, and social workers have access to on-call translation services for non-English-speaking monolingual patrons. Library personnel and volunteers promote the program, facilitate the appointments, and provide supplementary information to patrons.

SWITL expands access to information regarding social services in a unique collaborative model between social work practitioners and information professionals. It manifests the pursuit of social justice as it seeks to provide an opportunity for free, convenient and equal access to social service information for the public, especially the socially and economically disadvantaged. To further understand SWITL’s efficacy and explore additional opportunities for improvement/expansion, evaluative research was conducted among the social workers and library staff involved in this project. This paper will present in detail the SWITL model and discuss lessons learned from the evaluative research.
research. The authors hope that interested libraries/institutions will benefit from SWITL’s experience and make more informed decisions when implementing similar programs to fulfill their local patrons’ social service needs.

2. Literature Review

For many individuals, basic health, mental health, and everyday living needs can go unaddressed as a result of a lack of resources and information, as well as the limited number of access points to services. For communities particularly at-risk, such as members of certain ethnic groups or individuals from low socioeconomic and disadvantaged backgrounds, access and utilization of services is even more limited (Chow, 2003; Lopez, Bergren, & Painter, 2008; Snowden, 1998). For example, new immigrants needing help might turn to a family member, spiritual/religious head, or trusted community leader instead of a health professional or social worker.

This is due in part to unfamiliarity with services and the reluctance to seek help because of cultural perceptions regarding health and well-being, and the stigma associated with the feelings of shame attached to needing and asking for assistance. In addition, the location of the social service center can decrease accessibility. In the SWITL program model, the public library serves as an additional social service information and referral center for the community.

Libraries are viewed as welcoming public places, with multiple branches positioned strategically in neighborhoods, offering free community resources. Libraries promote lifelong learning and address community needs through literacy programs, access to consumer health information, GED test preparation, and a variety of other campaigns. They respond to identified community needs, offering multicultural staff, providing books, media, and programming in multiple languages, and designing programs to increase accessibility of their collections and services to individuals of all ages, backgrounds, and abilities.

Furthermore, libraries naturally attract those seeking information and assistance for a variety of needs, including many who are intimidated by formal social service agency settings. In the United States, 65% of households use public libraries on a regular basis (NCES, 1997). Public libraries serve a wide range of individuals who may benefit from access to local social service programs, including recent immigrants, homeless populations, migrant workers, unemployed individuals, and people with disabilities. Numerous studies have explored how different groups use public library resources, correlating library use with factors such as education level, income level, program/service awareness, economic needs, and social capita (Burke, 2007; D’elia, 1980; Gong, Japzon, & Chen, 2008; McClure & Bertot, 1998; Sin & Kim, 2008; Washington State Library, 2009).

The connection between public libraries, library and information science, and human service professions such as social work is not new (Collins, Howard, & Miraflor, 2009; Durrance & Fisher, 2003; Hendler, 2000; Hughes-Hassell, Hanson-Baldauf, & Burke, 2008; Leisey, 2009; Lempinen, 2005; Snow, 2009).
For example, public libraries are typically among the first locations offering support following a disaster (Featherstone, Lyon, & Ruffin, 2008). New Orleans residents relied on their public library for information and access to government forms and FEMA relief in the aftermath of Hurricane Katrina. Recognizing that libraries serve as a natural meeting place, the Alachua County Library District created “The Library Partnership–A Neighborhood Resource Center,” which offers space for social services (“Florida Library Merges Branch, Social Services”, 2009). Recently, San Francisco Public Library hired a social worker to assist homeless patrons (Knight, 2010). Librarians who staff public library reference desks frequently interact with patrons seeking answers to a range of questions related to social service issues, such as legal and health information needs (Cathcart, 2008). While the literature is abundant with studies aimed at enhancing library services to fulfill these needs (Ashmore, 2008; Curry, 2005; Gillaspy, 2005; Harris, Wathen & Chan, 2005; Kouame, Harris & Murray, 2005; Tashbook, 2009), their focus is primarily internal service improvement. Few studies consider how external partnerships, like those with social workers, can expand the service expertise and better address patron needs.

Despite a handful of efforts to unite these two disciplines that have similar missions to advance community well-being and enrich lives, there are few deliberate partnerships between public libraries and the social work profession and limited program models where these types of collaborations result in increased access to social services. More importantly, there is a dearth of scholarship and research regarding collaborative service models that partner these two disciplines to better meet community needs.

3. The SWITL Model

SWITL is hosted at King Library, which is a joint library the serves both the City of San Jose and San Jose State University. It opened in August 1, 2003, and its building has eight floors plus a mezzanine and lower level, and a capacity of 2 million volumes. On average, over 1 million visitors are served per year. The Library is free and open to all – no identification or proof of residency is needed to use or enjoy materials within the Library. NASW, through the efforts of two California NASW Board Members, is the co-sponsor of SWITL. Founded in 1955, NASW is the professional organization which seeks to enhance the effective functioning and well-being of individuals, families, and communities through its work and advocacy.

As mentioned earlier, SWITL is a collaborative effort involving SJPL staff, NASW members and SJSU faculty and students. Once a month (twice a month since October 2011), two to three volunteers from NASW (including faculty members and students at SJSU) spend two hours at King Library offering one-on-one sessions, whose objective is not to establish client/social worker relationship but to provide information consultations. Each session is about 20 minutes in length, during which volunteer social workers offer consultation regarding information sources and referrals to local social services (e.g. relevant program and contact information) in response to patrons’ information needs.
They also provide follow-up via opportunities for future appointments if patrons have additional questions. Staff at King Library coordinates these sessions, scheduling appointments and handling logistics.

A break-down of its elements is helpful to further understand how SWITL works,

• SWITL is promoted by various means, such as flyer, Website, and electronic display board.
• A dedicated phone line is used to conduct initial screening of patrons and schedule appointments for them.
• A reception area is provided for patrons awaiting their sessions to browse book displays, affiliated library program announcements, resource guides, and other collections of library materials.
• Volunteer social workers are scheduled to fill session slots.
• Logistics such as meeting room, computer and internet access, refreshments, children’s table, liability waiver, and AT&T translation line are handled in preparation for the sessions.
• A collection of resources, such as resource guides, information pamphlets, agency contacts, and resource binders, is available to assist information consultations during the sessions.
• Primary clientele are library patrons with information needs on the following topics:
  • Education
  • Emergency Services - food, clothing, housing and crisis support
  • Employment
  • Adjustment from grief or loss
  • Family Matters - parenting, childcare, elder issues and domestic violence
  • Health Improvement - mental, physical and health insurance
  • Immigration
  • Housing
  • Hunger
  • Literacy
  • Legal Issues (referrals to Lawyers in the Library)
  • Support Groups - men, women and teens
• Feedback from both patrons and social workers is gathered.

Because of the in-depth information consultations offered by SWITL, the public now have expanded access to a wealth of social service knowledge and their information needs can be better fulfilled. This is particularly beneficial to people representing vulnerable populations (low income or education level, over age 65, or minority) as the public library is usually the first place they resort to for social service information such as health information (Zoints, Apter, Kuchta & Greenhouse, 2010). Improved meaningful access to information will in turn lead to more informed decisions about their personal situations and increase their opportunities to succeed in society.
3. Research Methods

Since the inception of Social Workers in the Library, in October 2009 thru December 2011, 27 sessions have been conducted at King Library. A total of 193 individuals were interviewed over the phone, among whom 116 were attended to by members of the NASW, and 13 were served via phone consultation. In addition, ten drop-ins also received consultation. The major issues concerning library patrons were health, family, employment and housing needs. In October 2011 King Library was able to increase services from once a month to twice a month, and another SJPL branch, Biblioteca Latinoamericana Library began monthly services with a Spanish/English bilingual social worker.

To further examine how SWITL has helped library patrons with their information needs regarding social services, patron feedback was gathered through survey questionnaires. The use of self-administered anonymous survey allowed respondents privacy and anonymity when offering their input, providing a comfortable venue for patrons to share their perceptions of SWITL. The uniformity of questionnaire items enabled statistical analysis of the responses and thus presented quantitative evidence of SWITL’s impact. Four key variables were investigated in the survey – the helpfulness of SWITL services, the professionalism of the SWITL social worker, needs fulfilled by SWITL, and areas for service growth. Among the 41 validly completed questionnaires, SWITL services were evaluated between “helpful” and “very helpful” according to a 4-point Likert scale (mean = 3.74; SD = 0.59) with 1 being “very unhelpful” and 4 being “very helpful.” Many patrons came seeking referrals for housing, food, health and mental health services, and employment. There were a variety of other needs as well, including grief support, family counseling, and legal advice. Patrons rated the professionalism of the SWITL social worker volunteers very high according to a 5-point Likert scale (mean = 4.68; SD = 0.79) with 1 being low and 5 being high. The main area for growth suggested by patrons was the need for more time for the referral/consultation session. These results indicated that the objective of SWITL was achieved successfully. Patrons’ various social service information needs were fulfilled by the services provided by SWITL.

Although patrons attributed high regards to the SWITL service, it was still necessary to examine the program from the perspectives of all parties involved. Library staff and social workers have worked on different aspects of SWITL’s operation, and their input is as valuable as patrons’ with regards to understanding SWITL’s efficacy and improving the program to best meet the public, particularly the underserved population’s social service information needs. Focus group interviews were conducted among volunteer social workers and library staff (from the entire library, including both City and University Library staff, not just the ones working with SWITL). Focus group interviews were used as the data collection instrument. A focus group generally involves 8 to 12 individuals who discuss a particular topic under the direction of a...
There are three elements of SWITL that were considered working well.

- The physical setting (a waiting area and a private room) of the area where social workers meet with library patrons
- Undivided attention to patrons in a private session
- The system of patron screening and appointment scheduling

In the meantime, several areas for service improvement were also identified.

- Promote SWITL to patrons more actively. Promotional efforts may include putting up print and electronic posters, word of mouth advertisement, and making promotional materials that are easily understandable by low-income patrons, such as using audio material, easy language or translations.
- Increase awareness of SWITL among library staff. It is helpful to have individuals involved in SWITL talk about SWITL at meetings of other library departments in order to generate more awareness and better understanding of what the program entails.
- Help patrons self-identify their social service needs. It is important to be specific about what the program is about, what kind of services social workers offer, and what patrons can gain from it.
- Provide more information resources about social services, such as NASW literature, resources and tools that could help librarians help patrons with immediate social service needs, and a FAQ list.
- Expand availability of the program via means like using student interns from School of Social Work and School of Library and Information Science, and offering services remotely via phone or email.
- Create an environment for patrons to both get peer support and benefit from a private session with social workers.
- Justify library staff time spent on SWITL. It is helpful to have concrete evidence (e.g. cost-effectiveness analysis) that could quantify the value of the library staff time.
- Ensure accountability on the part of social workers (e.g. show up at scheduled sessions) when the program expands.
- Work with surrounding communities to utilize their resources and have them inform their community members about SWITL.
Both quantitative and qualitative research methods were employed in the study to evaluate how effectively SWITL meets patrons’ social service information needs and explore how to further improve the SWITL service. Promoting social justice via expanded access to social service information is the driving force behind SWITL, and service evaluation and improvement is a pivotal pathway toward SWITL’s constant success in contributing the society’s social justice agenda. Results from the mixed-method evaluation study suggest that while patrons who received service from SWITL had positive experience, it is important to more effectively promote the program in the traditionally underserved communities and enable more people from the vulnerable populations to benefit from the program.

4. Conclusions

Nowadays, as the gap between rich and poor continues to widen, the need for public libraries to tackle social exclusion and engage in social justice becomes ever more urgent. The development growth of public libraries hinges upon its relevance to the majority of their local communities (Pateman & Vincent, 2010). In order for them to fully grasp the “equity” agenda and transform into needs-based services, innovative approaches are needed to reach out to the communities, meet the needs of the underserved, and succeed in the pursuit of social justice.

SWITL is a unique public service model where volunteer social workers provide information consultation/referrals at a public library. Such collaboration between social workers and library staff greatly enhances public access to quality information on social services and reinforces the value of public libraries as a community resource. Since its inception, SWITL has helped over one hundred library patrons, and its expansion both in terms of service hours and location attests to its success in helping patrons with their social service needs. Based on feedback from library patrons, SWITL has been a professional and helpful program, and much appreciated by patrons who have benefited from it. There are still areas for improvement though, and additional efforts need to be made in response to these suggested improvement and make SWITL a more effective and efficient program. In summary, the authors hope that through sharing the details of the SWITL model, interested libraries will develop a solid understanding of the inner workings of this innovative approach and therefore make more informed decisions when implementing similar programs to fulfill their local patrons’ information needs and to support the agenda of social justice.

References


Developing a model for information services based on a librarian-user partnership in medical clinics in Bucharest

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Abstract: Although in many countries the role of clinical librarian who works outside the medical library’s physical space, in a clinic or hospital where in the context of evidence-based medicine supports the clinical and research activity as a trusted member of a multidisciplinary team has been acknowledged for a long time, in Romania things are quite different. Most medical librarians work in academic medical libraries where they support the educational and research approach of the medical community, providing access to the scientific information in the biomedical field, and having just a co-ordinating role for the branch libraries in different hospitals. But in the context of the new information and communication technologies and of the developments regarding the electronic library and collections there has been created the necessary framework for a repositioning of medical librarians and for the promotion of a new type of relationship between them and users based on a possible integration of librarians as members into the clinical and research teams. This could lead to a stronger partnership between them. Change can be used for the benefit of both sides and this paper presents in brief a model for a new type of services for the information users in Bucharest medical clinics designed starting from a study of information practices at the level of hospital libraries.

Keywords: information services, medical librarians, information users, medical clinics, Bucharest

1. Introduction

In health sciences education and research and in clinical practice a great emphasis is put nowadays on evidence-based medicine. Most evidence-based medicine projects developed in different countries and institutions are in collaboration, clinicians, researchers, and librarians, all bringing their contribution in order to improve patient care. Evidence-based medicine requires “the ability to access, summarize, and apply information from the literature to day-to-day clinical problems, this means an understanding of the structure of medical literature and the use of clinical filters in searching medical databases”, all these proving according to P. W. Dalrymple the fact that the librarian must be integrated into the culture of the clinical team. (Dalrymple, 2000)
The difficult part for clinicians in making decisions is generated at present by the increased volume of healthcare knowledge, the different types and representation media in which this knowledge exists. (Abidi, 2008) Medical professionals lack also the time, and especially the training to do literature searches and access relevant databases in order to properly practice evidence-based medicine. The necessary expertise for this is held by the medical librarians and information specialists who can assist them. As members of the clinical teams, they can support in a great measure the activities that take place in a clinic because they have a series of abilities such as "the ability to ask questions, the ability to learn and interest in clinical and scientific issues, good use of information and communication technologies, collection and processing of strategic information, (...)", but it is necessary that they also have knowledge and experience concerning "medical terms, project management, searches of databases, concepts of evidence-based practice, research methods used in the medical field, (...)". (Harrison et al., 2010)

In many countries the role which medical librarians have in supporting the clinical and research activity as members of multidisciplinary teams has been acknowledged for a long time. In Romania, the situation is different. Most medical librarians work in academic medical libraries where they support the educational and research approach of the medical community, providing access to the scientific information in the biomedical field, and have just a coordinating role for the branch libraries in different hospitals.

2. The context of the hospital libraries and medical information services in Romania

The Romanian health system is confronted with a series of problems and many of them start from the low level of financial resources allocated to this sector and also from a deficient management of the financial, material and human resources and in this context the information for the medical practice is not among the most important points on the health public agenda.

In Romania, as I. Robu remarked, there is not yet the reflex to search information for the practice as it happens in other countries. Physicians search themselves for information, very rarely or almost never thinking that a librarian or information specialist could help them. (Robu, 2011)

In Romania there are no real hospital libraries, maybe with few exceptions. Medical information can be found in the libraries of the Universities of Medicine and Pharmacy. In most cases, the branch libraries in hospitals are just some book collections in a room from different clinics or departments, no branch having a librarian.

In Bucharest the situation is similar to that in other Romanian cities where there are institutions of higher education in the medical field. The Central Library of the “Carol Davila” University of Medicine and Pharmacy in Bucharest is the largest and the oldest medical library in Romania. Established in 1857, the library currently serves the users from the whole University, which includes the Faculty of General Medicine, the Faculty of Dental Medicine, the Faculty of Pharmacy and the Faculty of Medical Assistance and Midwives. There are more
than 10,000 active users of the library. The staff of the library consists of 37 people, 32 of whom are specialists. (Porumbeanu Madge, 2011)
Technological changes, the knowledge-based society and the more specific needs of users make necessary at the level of this library an increase of efficiency, improvement of the quality of information products and user services, the creation of adequate conditions for the implementation of new managerial processes such as the knowledge management process (Porumbeanu, 2010; Porumbeanu Madge, 2012), but also a repositioning of librarians through the information services they can offer to the medical professionals in the provision of health services.
The Central Library of the “Carol Davila” University of Medicine and Pharmacy in Bucharest has also 95 branch libraries that exist at the level of university departments, chairs and clinics which are spread in hospitals all over Bucharest. These libraries vary in what concerns the size of their collection: from 40,000 – 50,000 volumes down to 300 - 400 volumes.
The Central Library does the acquisition and the processing for these branch libraries which are most often administrated by a member of the medical staff in every clinic. All persons who work or study in the clinic at a certain moment, teaching staff, physicians, nurses, residents, PhD students, undergraduate students, have access to the branch library. Not all branches have access to the electronic information resources provided by the Central Library. Till 1980 there were librarians from the Central Library who worked in some clinics but in the last years there have been no financial resources for clinical librarians.
We must mention the fact that in Romania the librarian doesn’t have yet a very good image among the general population – aspect showed by a recent research at the patients’ level (Porumbeanu and Madge, 2009), but also among medical professionals – as shown by a 2011 research (not published yet) of the author.
However, in comparison with the main category of users of the Central Library, the students, who prefer and use in a rather small number the electronic information resources (Porumbeanu, 2009a; 2009b), the users from the clinics prove other information practices and a higher preference and usage of electronic resources (79% of the participants in the survey). Many of them would want training for using these resources because they are confronted with some difficulties. Although there were some remarks that a librarian would not have what to do in the clinical team, still the majority (54%) of respondents would want a closer collaboration with the librarians which supports our proposal for developing a partnership between librarians and the medical staff of the clinics in the hospitals where there are branch libraries.

3. Information services based on a librarian-user partnership in medical clinics in Bucharest

In the context of the new information and communication technologies and of the increasing volume of electronic information resources the presence of a librarian in the branch libraries who could assist with information services the members of the clinic in their daily practice and in their scientific and research activity becomes more necessary and the importance of its role is understood by
more and more health professionals. So there is the need and also the conditions in Bucharest teaching clinics especially that a librarian is included in the clinical team that provides health services to patients and is involved in research projects.

There could be a pilot phase initially in one of the clinics and a librarian could go and work in that branch library where he could provide information services to the whole medical team. The librarian should have good communication abilities, should be able to easily integrate in the clinical team and interact with all the members of the clinic, should have experience in searching in the databases, he should be familiar with evidence-based practice, should have initiative, and skills for offering training to the medical professionals in the information literacy area.

The librarian should be invited to participate at the annual meeting for the planning of the clinic’s activity, at the daily morning report and visit, at the monthly meetings when the scientific activity of the clinic (participations in conferences, congresses, etc. with papers, publishing of scientific articles, etc.) is planned and evaluated (evaluation of the research progress for the PhD theses being undertaken in the clinic, of the documentation activity for the research projects in which the clinic participates, etc.).

The librarian’s contribution could be on more levels:

- Information gathering and delivery to the members of the clinic on professional scientific events, competitions for research funding, etc.;
- Information provision which could support the members of the clinic in the health services which they provide to patients;
- Documentation activity and its results’ delivery to those involved in research for PhD theses and in research projects;
- Newsletter on the new aspects in their field which are of interest to the members of the clinic;
- Training sessions provided on a periodical basis and whenever the members of the clinic request and also depending on the new resources which the Central Library offers, on the use of the electronic information resources and on the information search and retrieval techniques. (Figure 1)
But provision of all these services by a librarian makes necessary his inclusion, his acceptance as a member of the clinical team, a high level of trust from the part of the medical members of the clinic in the librarian’s information activity and skills, and a very good communication at the level of the whole team.

4. Conclusions

It is critical at present that librarians and information specialists provide information assistance to medical researchers and clinicians. Library and information professionals can have an essential contribution to the improvement of healthcare, to the quality of the health services by supporting medical professionals in the search and retrieval of information, by making available for them the relevant knowledge at the right time for making the best clinical decisions.

Also the value of the scientific activity, of the clinical practice and research developed by the members of the clinics from the hospitals where there are branch libraries of the Central Library of the “Carol Davila” University of Medicine and Pharmacy in Bucharest could increase on the basis of the information services offered by a medical librarian or information specialist, but an efficient activity in this sense requires a partnership relationship between medical professionals as information users and librarians.
References


Search Strategies of Library Search Experts

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Abstract: Search engines like Google, Yahoo or Bing are an excellent support for finding documents, but this strength also imposes a limitation. As they are optimized for document retrieval tasks, they perform less well when it comes to more complex search needs. Complex search tasks are usually described as open-ended, abstract and poorly defined information needs with a multifaceted character. In this paper we will present the results of an experiment carried out with information professionals from libraries and museums in the course of a search contest. The aim of the experiment was to analyze the search strategies of experienced information workers trying to tackle search tasks of varying complexity and get qualitative results on the impact of time pressure on such an experiment.

Keywords: Information professionals, search strategies, library search contest

1. Introduction

Despite the fact that nowadays a certain amount of duties of library professionals can be automated by using modern search technologies, such human search experts are still the key intermediates between information seekers and the information repositories in a modern library environment. Dent (2007) summarized the main flaws of search technologies the following way: Their implementations are neither able to speak, nor able to comprehend content in any way. They are not able to draw connections between sources and not able evaluating the quality of a source.

In our times of information overload, users need the assistance of library search professionals more than ever to help them find high quality resources (Han & Goulding 2002). Although it might seem questionable in the light of theories on information society (Webster 2006), the common denominator for people who work in libraries, museums or archives is being an information professional. These persons “have to deliver information, information products and information services for special problem situations in which users seek for information. Information professionals are supposed to navigate users to resources. Information professionals should also help determine information needs of users” (Steinerova 2001). Information professionals in the context of
our work are characterized not only by their ability to search information, but also by other skills of information literacy like being able to represent the problem space and possible solutions. Those abilities make this profession a very interesting research target when it comes to learning more about search strategies. As Kuhlthau (2005) has pointed out in his Information Search Process framework, the process of information seeking is “based on four criteria: task, time, interest, and availability” and “one of these may predominate at any given time”. In the context of our study where the task is pre-given, lack of time can be an important factor that can have an impact on the performance of solving information search tasks. In this paper, we will present the results of a search experiment carried out with information professionals from libraries and museums in the course of a search contest. We will present a new taxonomy of search strategies and apply it to our experiments. We will show what strategies those experienced information workers chose in order to solve the complex problems assigned to them during the search contest and that those information professionals are preferably applying one type of search strategy. The paper will also show that a certain Internet user type performs significantly better than the others.

2. Related Work
Search strategies have increasingly been researched in the last years. Marchionini (1995) has defined four levels of description in information seeking: moves, tactics, strategies, and patterns. He defined strategies as generalized approaches to particular information seeking problems. As proper studies about search strategies of information professionals rarely exist, we focus on the work that was done on search strategies in general. Navarro-Prieto et al. (1999) identified bottom-up, top-down, and mixed strategies. A top-down strategy means that users search in a general area and then narrow down their search from the links provided until they find what they are looking for. In the bottom-up strategy users look for the specific keyword that was provided to them in the instructions. This strategy was most often used by experienced participants, for the specific fact-finding searches. Chin & Fu (2010) found in their study that younger users prefer the bottom-up interface-driven strategy. They look up more links and leave a web page quickly. Older users prefer the top-down knowledge-driven strategy. They look up only a subset of links, take longer time to click a link, and leave a web page later. Thatcher (2008) has studied cognitive search strategies among experienced and less experienced web users. He identified the following cognitive search strategies: (1) parallel player, (2) parallel hub-and-spoke, (3) known address search domain, (4) known address, (5) virtual tourist, (6) link-dependent, (7) to-the-point, (8) sequential player, (9) search engine narrowing and (10) broad first. Participants with higher levels of web experience were more likely to use strategies 1-4, whereas participants with lower levels of web experience were more likely to use strategies 5-10. This system contains numerous overlaps among the strategies mentioned and can therefore be used more for characterization than for a classification. We therefore created a classification of
search strategies (better meeting our requirements), which we present in the next section.

The concept of a search task is important especially when it comes to search strategies. Schneiderman (1997) distinguished searching tasks from specific fact-finding to more unstructured open-ended general-purpose browsing tasks. The latter are usually classified as exploratory search tasks. Those were investigated extensively by Marchionini (2006) and White & Roth (2009) and are usually described as open ended, abstract, and poorly defined information needs with a multifaceted character.

The Search-Logger framework (Singer at al. 2011) that we used in our experiment is a research framework to monitor and analyze search tasks. It consists of a plug-in for Firefox web browsers and a corresponding database back-end. The Search-Logger collects implicit user information by logging a number of significant user events like links clicked, queries entered, tabs opened and closed, bookmarks added and deleted, and clipboard events. Explicit information is gathered via user feedback in the form of customizable questionnaires before and after each search task. We selected Search-Logger as the framework to monitor the contest over other web monitoring tools as Search-Logger is the only one, which supports exploratory search tasks. Furthermore, it is developed by our research group and therefore was easy to adapt to our monitoring needs.

We are also interested in the correlation between the specific Internet user types and our experiment results. Kalmus et al. (2009) define in their work the following types of Internet users: Active versatile (these are more active using different Internet possibilities like communication, information and entertainment compared to other groups), entertainment-oriented active (mainly on searching for entertainment, and consumption of culture), practical work-related (focus on information and practical activities, active in using e-services), practical information-oriented small-scale (slightly higher than average use of information and e-services), entertainment and communication-oriented small-scale (searching for entertainment, communication, passive Internet use with regard to other purposes) and small-scale (not characterized by any specific Internet use, very lowly developed online behavior).

3. Methodology

We conducted our study within the framework of an information search contest that is carried out annually among library and museum search experts in Estonia. The contest consisted of two rounds: from 50 participants in the first open round, the ten best in terms of accuracy of their solutions (but only one representative per institution) were selected for the second round. We used the second round of the contest to carry out our experiment. It took place in a laboratory environment in class, where Search-Logger (as outlined in the related work section) was pre-installed and pre-activated on ten computers. The demographics of our user sample is summarized in Table 1. It consisted of 10 women, aged between 27 and 51.
The search contest consisted of 15 search tasks (the answer had to be available somewhere in public websites) that can be classified as exploratory search tasks of varying complexity as defined in the related work section, and lasted for two hours. The complete list of questions can be obtained from the Search-Logger web page (Singer and Norbisrath (2010)) upon registration. The following five questions are some examples of the tasks assigned during the contest:

- (2) Find open access journals (that need not to be scientific journals) that are dedicated to school librarians.
- (3) Who is in the picture and which Austrian writer for children is the author of this little fellow?
- (5) How to calculate the area of this figure? Please find an appropriate formula!
- (8) What kind of natural paint could you use for painting both wooden furniture and walls of the room?
- (9) Let’s suppose that the building of a small village library is quite in a bad condition and desperately needs some renovation. Who and from what program could apply for funds for renovation works?

For our main analysis on search strategies we created a new classification of search strategies (see Table 2) which is based (1) on the work by Thatcher (2009) described in our related work section and (2) on the search behavior of the information professionals taking part in our experiment. The new classification consists of two main groups: “Known address” strategies and “Search engine” strategies as people generally start their search with one of these options. Known address strategies are characterized by users directly navigating to a web site (not a search engine) they already know about. The Known address group comprises the following three subgroups: “search terms narrowing” (users carried out the search using the search function on the known web page), “narrowing in categories” (users are clicking through the category structure or directory structure of a web site) and “to the point” (users first used the specific search terms to get directly to the answer).

The Search engine group comprises the following four subgroups: “search terms narrowing” (users carrying out the search using search engine results only), “search terms narrowing and extending” (users navigating to a search engine, starting with a specific search term and then using a certain result to broaden the search with a query based on this result), “search terms narrowing
In addition, we have also analyzed the efficiency of the whole search process, checking if the participants only worked with one browser tab or used multiple browser tabs ("parallel-player strategy" or not).

4. Results

As stated in the last section we have analyzed the recorded data to identify the search strategies (as outlined in Table 2) of library and museum professionals. First, we divided the users according to the Internet user types we outlined in the previous section. In Table 1 we have listed the users and their respective Internet user types of the participants in the sequence of how they scored in the contest. This way we can observe correlations between Internet user type and their score in the contest. It is interesting to see that the participants who scored first, second, and third in the contest all have an Internet user profile “active versatile”. This Internet user profile is the most active one, having high scores on all dimensions (as outlined in the related work section). We can conclude from this that the more users are active in different areas of the Internet the more they have Internet usage experience and the better (quicker, more efficient) they are in information seeking and problem solving on the Internet.

Table 1 also shows how many points the participants scored in the experiment, the rank they achieved in the contest, and age and gender of the contest participants. The last two columns summarize the basic search performance related measures like the average number of tabs opened and closed and the average number of words used per user for all queries in the experiment. The last row of Table 1 shows averages of all measures over all users and all search tasks.

As we can see from Table 1 the winner used the least amount of 35 tabs over all and typed in the longest average search queries. It appears that the winner used a very efficient strategy, applying long and very relevant queries. User 8 on the second place used the second longest average query length after the winner. From this we can conclude that longer and very relevant queries can be seen as an indicator for being successful and efficient in information seeking on the Internet, at least in exploratory search tasks. An average of 16 points out of 30 per user means that the contest questions were obviously challenging to answer for the contest participants.
In the next step we have analyzed the data regarding the search strategies that were applied by the contest participants. Table 2 contains the absolute counts for how often each strategy was used by each user throughout the experiment. The last column states the total number of tries for the whole experiment. It can be seen that the participants who scored first and second used quite different approaches. While the winner, User 3, only needed 57 tries, the second, user 8, needed 167 tries. Obviously User 8 much more applied a trial-and-error like approach, while the winner was very efficient with fewer and more precise queries. It could possibly also be explained by the age of the users as some previous research showed (see Chin et al. in related work section) that younger users look up more links and leave a web page more quickly than the older users. The last row of Table 2 “Distribution” illustrates how often a certain type of strategy was applied in relation to the total number of trials. Overall the library search experts most often applied a search engines strategy with subtype “search terms narrowing” (84,6%). This was followed by a search engine strategy with subtype “search terms narrowing extending” (7,4%). Only on the third place was the first “known address” strategy with subtype “search terms narrowing” (3,1%). It seemed that if users were aware of a web site, where they expected to find the information, a “known address” strategy was tried first and when it failed, a search engine strategy was used as a back-up.
The predominant use of a search engine strategy (with subtype “search terms narrowing”) means that they start with a search term and narrow down the result space until they have found the information needed. Also the second most applied sub strategy “search terms narrowing-extending” is related. Here the users are alternatively getting narrower and broader again by using a certain search result as the basis for formulating new queries in order to explore a bigger result space. Overall all the contestants used a parallel-player strategy throughout the whole experiment, continuously having multiple browser tabs open and closing old ones and opening new ones which is common for more complex exploratory search tasks. Our experiment has shown that exploratory search tasks are too complex to successfully be solved by one single strategy. Which one is used depends on the task, on the skill set and knowledge of the person.

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<tr>
<th></th>
<th>Search engine</th>
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<tr>
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<td>User 3</td>
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<td>User 8</td>
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<td>User 6</td>
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<td><strong>Total</strong></td>
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<td><strong>Distribution (%)</strong></td>
<td><strong>84.6</strong></td>
<td><strong>7.4</strong></td>
</tr>
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Table 2 Strategies applied by contest participants (ordered by final score)
In order to investigate the time pressure impact on the contest outcomes we compared the results of the contest with the results the contestants achieved in the pre-round. As opposed to what we initially expected when setting up the experiment, we could not prove a significant impact of the time pressure on the contestants. Qualitatively the results are mixed, some contestants did not show any effect, some performed better and some performed worse.

5. Conclusions and future work
We conducted a study about search strategies of library and museum search experts with 10 participants taking part in a search contest. It took place in a laboratory environment in class. We presented and analyzed selected search strategies of these library and museum professionals and related them to the actual behavior carrying out the respective search tasks. We also showed the relation between the observed behavior and their respective Internet user type classification.

All participants finished the contest, with the winner scoring 28 out of 30 points. The most important observation was that all participants predominantly (in 94.4% of the cases) used search engine strategies. In only 5.6% of the cases, the library search professionals applied a non-search engine strategy. This reconfirms that search engines are a good entry point to exploring a search space. Yet in case they are not sufficient they need to be augmented with specialized search portals. The low average number of points (16 out of 30) and the high average number of opened and closed tabs (49) and strategy tries per task (62) appear to indicate that search engines are not very well suitable to carry out exploratory search tasks of the kind used in the experiment. It also indicates, that the more complex an information seeking task becomes, the less search engines alone without a certain amount of personal experience and knowledge are enough to ensure problem solving.

The experiment had some limitations that we will try to resolve in future experiments. First, we only had a small sample of 10 users. So the results have more qualitative than quantitative character. Another limitation was that our sample only consisted of women. In the future we will try to also carry out an experiment with men to analyze the gender impact on the search strategy selection. For this study we have intentionally omitted the chronological order in which the strategies were applied. We have only looked at what strategies the study participants have used not taking into consideration when and in what sequence they were used. A follow up paper will add the time dimension to the results. The experiment was carried out under time pressure. Although we could not show a significant impact of time pressure on the study results, the results might have turned out differently under open ended conditions as in the experiment described by Singer et al (2011) where the study participants had 4 weeks to complete their task. We are planning an open ended follow up experiment with the same questions to further analyze the impact of time pressure on the study results. Overall the younger the participants were, the
better they scored. We will also further analyze the correlation between age and search performance.

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References
Medford, New Jersey: Information Today.
Perspectives of LIS Academics and Post Graduates on Standards-based and Socially-Constructed Metadata Approaches

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Abstract
With the aim of developing a conceptual metadata framework that takes into account user-driven metadata, this paper presents the perspectives of library and information science (LIS) academics and postgraduates on optimality of standards-based versus socially-constructed metadata approaches. Based on analysis of data collected through eleven in-depth interviews, three broad metadata approaches are identified: standards-based, socially-constructed and mixed-metadata approaches. In relation to standards-based approaches, the paper discusses the obsolescence of the OPAC in comparison to contemporary web search engines and the limitations of standards in addressing the changing user needs, expectations and evolving vocabularies. The paper also discusses the roles ascribed to Web 2.0 and Linked Data technologies in libraries, and the importance of enriching information objects with metadata that better conveys the various perspectives of users. The paper suggests a mixed-metadata approach that includes the strengths of the standards-based metadata approaches and the social space of metadata that comes from socially-constructed metadata approaches.

Keywords: Metadata, OPAC, Web 2.0, Linked Data, Socially-constructed metadata

1. Introduction
As the size of collections in digital libraries continues to grow, contemporary standards-based metadata approaches fail to scale in enriching the ever increasing amount of information objects with appropriate metadata (Lagoze, 2010; Lagoze & Patzke, 2011; Mathes, 2004; Shirky, 2005; Veltman, 2001; Weinberger, 2007). This is due, first of all, to the fact that current metadata standards are mainly concerned about the physical characteristics of information objects (Day, 1997 as cited by Wright, 2007, p. 86). Secondly, librarians may not have the required expertise in specialised domains (e.g., Egyptology) in order to adequately describe the semantic aspects of information objects (Lagoze, 2010; Shirky, 2005). Thirdly, as the size of their collections grows, librarians will increasingly find it difficult to describe every digital object (Shirky, 2005). In this connection, Lagoze and Patzke (2011, p. 375) contend that “well established and well-known bibliographic standards, undeniably useful for traditional library cataloguing of a range of resource types, have been shown to be too complex and not scalable for digital resources”. Fourthly, as
Shirky (2005), Veltman (2001), and Weinberger (2007) argue, human beings are highly unlikely to agree on a singular, authoritative and hierarchical classification of objects.

Unfortunately, most current standards tend to adhere to what is known as the ontologically and objectively true viewpoint, thereby failing to take into account the diversity of cultural, linguistic and local perspectives that characterise library users, an outcome for which they have been often criticised (Shirky, 2005; Veltman, 2001; Weinberger, 2007). As Shirky (2005) argues, the art of classifying and categorising information objects in the digital world using traditional categorisation schemes is a forced limitation imposed from the habits of organising physical objects in the physical world. Thus, Shirky (2005) and Weinberger (2007) argue that conventional library classification systems, such as the Dewey Decimal (DDC) and Library of Congress (LC) classification systems, are severely limited in their ability to organise and make digital content accessible and findable for the diverse group of digital library users. In addition, it is also argued that the cost of creating and maintaining taxonomies is a major constraint (Barbosa, 2008; Shirky, 2005). In his oft-cited article, Shirky (2005) contends that “well-managed, well-groomed organizational schemes get worse with scale, [...] because the costs of supporting such schemes at large volumes are prohibitive”. Perhaps the most important of these limitations, which is also the concern of this paper, is that in standards-based metadata approaches “the vocabulary of the information professional/librarian may be at odds with the language of content creators and users, obscuring the very information the taxonomy should reveal” (Barbosa, 2008).

To overcome these limitations, an alternative approach has evolved with the advent of social media and Web 2.0 technologies (O'Reilly, 2005). A collaborative metadata approach, known as “folksonomy” (Vander Wal, 2007), has emerged and is currently in widespread use in popular web applications such as Wikipedia, Flickr, LibraryThing, Delicious and Technorati (Farkas, 2007; Maness, 2006; Pressley, 2005; Smith, 2008; West, 2007; Yi & Chan, 2009). Vander Wal (2007) defines folksonomy as “the result of personal, free tagging of information and objects (anything with a URL) for one's own retrieval. The tagging is done in a social environment (usually shared and open to others)”.

In this paper, the term socially-constructed metadata is adapted as an approach that caters for not only social tagging, but also for the incorporation of user reviews, comments, highlights, ratings, and recommendations. For example, some social-bookmarking applications (e.g., diigo.com) and e-book readers (such as Amazon’s Kindle and Apple’s iPad) provide users, among other services, with features to highlight a part of a text, leave comments on margin (sticky) notes or write critical reviews about some of the works offered on readers. In principle, service providers could glean relevant information from such user-contributed metadata.
In a socially-constructed metadata paradigm, users not only search/browse and access content but also participate in its production and description. Put simply, this paradigm provides users of online systems (such as Flickr) with easy to use, flexible, collaborative and personalised tools to proactively tag, rate, link, review, comment, highlight and recommend content without the need for adhering to the strictures and tenets of standards-based metadata approaches (Kroski, 2005; Mathes, 2004; Smith, 2008; Udell, 2004). Discussions and debates on the notion of users/consumers/readers as contributors and co-producers of content and services goes back before the advent of the web. Foreseeing a read-write web, which has now become a reality, technology futurist Alvin Toffler coined the term “prosumer” in the early 1980s (Toffler, 1980), wherein he predicted that the delineation between producers and consumers of information objects would blur and that the two roles would converge. The implications of this convergence have been widely discussed in the literature (Anderson, 2006, 2009; Benkler, 2006; Surowiecki, 2005; Tapscott & Williams, 2010). The “prosumerism” phenomenon is enabled by what O'Reilly calls an “architecture of participation”, which is one of the core competencies of Web 2.0 technologies along with harnessing collective intelligence, remixability and mashability of data, radical user trust and data ownership (O'Reilly, 2005). This architecture lowers the barrier to entry for new contributors. Furthermore, central to this architecture of participation is the importance of embracing openness to share and collaborate (Alexander, 2006; Anderson, 2006; Shirky, 2005; Tapscott & Williams, 2010; Udell, 2004; Weinberger, 2005, 2007). Web 2.0, as O'Reilly (2005) and Miller (2005) contend, has a lot to do with attitude and culture than technology. In other words, Web 2.0 is not a new invention per se (Lagoze, 2010); rather it is defined by the participatory and collaborative culture that is built around Berners-Lee’s web (also called Web 1.0). In their bestselling book “Wikinomics”, Tapscott and Williams (2010, p.10) contend that “due to the deep changes in technology, demographics, business, and the world, we are entering a new age where people participate in the economy like never before”. The authors identify openness as one of the major principles of mass collaboration along with peering (self organised peer networks of contributors), sharing, and acting globally (expand the possibilities to tap a much larger pool of talent) (Tapscott & Williams, 2010, pp. 20-30).

One of the notable implications of Web 2.0 is the notion of user-generated content – a phenomenon that has stormed the scene, as exemplified by the rapid evolution and growing popularity of Wikipedia. Despite this explosive development, the phenomenon is not wholly uncontroversial. In what has become a widely cited article that appeared in the journal Nature, entitled “Internet encyclopaedias go head to head” (Giles, 2005), a total of 50 entries that appeared in both Encyclopaedia Britannica and Wikipedia on topics in the realm of science were compared. The pairs of entries were sent for blind review by experts, wherein the latter were asked to identify factual errors, critical
omissions and misleading statements in each pair. Forty-two of the entries were examined by the reviewers and the results revealed that “the difference in accuracy [between the two] was not particularly great: the average science entry in Wikipedia contained around four inaccuracies; in Encyclopaedia Britannica, about three,” indicating that malicious entries are “not rules but exceptions”. As pointed out in the study, the novel features offered by social media, whereby anyone, anywhere can add and edit entries, has given Wikipedia a competitive edge over Britannica. Furthermore, the study goes even further, arguing that Wikipedia has the advantage, as it benefits from having a wide spectrum of contributors, an increasing volume of entries, more frequent updates, and an in-built mechanism for resolving disputes. This study, however, did not go unchallenged (Britannica Inc., 2006). In a rather complete rebuttal of the study, Britannica Inc. (2006, p. 7) refuted the findings, stating that: “the study was so poorly carried out and its findings so error-laden that it was completely without merit.” Whereas it is not the aim of this paper to compare Wikipedia with Encyclopaedia Britannica, what is evident is the implication of social media and socially-constructed metadata approaches cannot be simply ignored, or as Lagoze (2010, p. 37) advises, “the participatory nature of Web 2.0 should not be dismissed as just a popular phenomenon [or a fad]”.

Despite several criticisms, particularly in relation to a lack of structure as well as an absence of editorial quality, authority and credibility (see Gorman, 2005; Keen, 2007), the actual and potential benefits of Web 2.0 technologies in general, and socially-constructed metadata in particular, have been convincingly and persuasively demonstrated (Anderson, 2006; Casey & Savastinuk, 2006; Casey & Savastinuk, 2007; Evans, 2009; Guy, 2006; Kroski, 2005; Lagoze, 2010; Maness, 2006; Mathes, 2004; Miller, 2005; Pressley, 2005; Shirky, 2005, 2008; Smith, 2008; Weinberger, 2005, 2007). Whilst some efforts have been made by libraries to introduce aspects of Web 2.0 services (Casey & Savastinuk, 2006; Maness, 2006; Miller, 2005), their application in metadata creation and utilisation is still limited (Evans, 2009; Lagoze, 2010; Pressley, 2005). Evans (2009, p. 10) notes that “Web 2.0 is a dated term, but its implications are not yet fully realised, especially for librarianship” perhaps because, as Lagoze argues, there exists a conceptual incompatibility between traditional library models and the emergent Web 2.0 approaches (Lagoze, 2010, p. 73). In connection with this, the scarcity of theories in library and information science (Andersen & Skouvig, 2006; Day, 2010; Floridi, 2000; Lehmann, 2010) implies that the problem could partially be attributed to the absence of a conceptual metadata framework that could serve as a basis for a better understanding of the possible uses of Web 2.0 services in libraries. Since metadata constitutes a central part of digital libraries (Anderson, Delve, Pinchbeck, & Alemu, 2009; Chan & Zeng, 2006; Day, 2003a, 2003b; Duval, Hodgins, Sutton, & Weibel, 2002; Nilsson, 2010; Pressley, 2005), it is of paramount importance that the choice of metadata approaches be underpinned by a sound theoretical framework. This framework must, of course, take into consideration recent theoretical and technological developments, such as the shift towards user-generated content, the spread of
social tagging practices, adoption of social networking applications (O'Reilly, 2005), as well as the move towards the acceptance of disparate points of views and negotiated meanings regarding digital objects (Weinberger, 2007).

2. Methodology
The design and deployment of the Online Public Access Catalogues (OPAC) seem to favour an objectivist perspective (Shirky, 2005; Weinberger, 2007), whereas the proliferation of Web 2.0 applications, such as the advent of socially-constructed metadata approaches, seems to follow an interpretive philosophical paradigm. A social constructivist epistemological perspective is considered appropriate to explore issues of socially-constructed metadata approaches. According to Duffy and Jonassen (1992), social constructivism posits that “meaning is imposed on the world by us, rather than existing in the world independently of us. There are many ways to structure the world, and there are many meanings or perspectives for any event or concept.” This is contrary to the objectivist view that “truth and meaning reside in their objects independently of any consciousness” (Crotty, 1998). The nature of knowledge in social constructivism focuses on “individual reconstructions coalescing around consensus” thus promoting shared and negotiated meaning (Guba & Lincoln, 1994).

Adopting such a constructivist epistemology has also implications in the methodology and methods of research. As Guba and Lincoln (1994), Charmaz (2006) and Mills, Bonner and Francis (2006) contend, in a constructivist approach, the investigator is not an objective observer but co-constructor of meaning along with the participants. Whilst objectivists accentuate the need to eliminate researcher bias by controlling confounding factors, such as researcher’s assumptions and points of views, constructivists encourage an active engagement and co-construction of knowledge. This paper follows an inductive approach and by that it tests no hypothesis.

Intensive interviewing technique was chosen so as to enable the researcher to ask for more detail, delve into an issue, go back and forth among important points and request for more explanation (Charmaz, 2006). The interviews mostly consisted of open-ended questions. According to Charmaz (2006) “the in-depth nature of an intensive interview fosters eliciting each interviewee’s interpretation of his or her experience.” Prior to each interview, introductory contacts were made, via email, in order to obtain the consent of each interviewee as well as to reach bilateral consensus as to the timing and venue of the meeting. Interviews were made purposefully informal, in order to encourage dynamic participation, on the part of interviewees, in the ensuing discussions, which were expected to constitute a significant portion of the meeting.

A total of eleven in-depth interviews were conducted — with two lecturers, one PhD student and eight MSc students in Digital Library Learning (DILL), all of whom were associated, in one capacity or another, with the EU-funded,
Erasmus Mundus programme offered by the Oslo University College (Norway), University of Parma (Italy) and Tallinn University (Estonia). The selection of interviewees was essentially purposive. Countries of origins of interviewees included Bangladesh, China, Denmark, Estonia, Ethiopia, Italy, Turkey, Uganda, Venezuela and Zimbabwe. Findings are discussed under the emergent themes presented below.

3. Interview Results and Discussions
3.1. Standards-based Metadata Approaches
All eleven interviewees acknowledged the prolificacy of standards. Some even repeated the often cited adage that “the good thing about standards is that there are so many you can choose from.” Under these circumstances, making the correct choice, when selecting a standard, as well as ensuring interoperability between digital libraries is bound to be a daunting task, although interviewees are not currently involved in these decisions. One interviewee expressed the opinion that “libraries should base their [selection] decisions on the type of resources [that they have] and the subjects they are describing.” During the discussion, it became apparent that, for this interviewee, interoperability was a much sought after issue, even though it was a complicated one. Nevertheless, the same interviewee conceded that established standards such as Dublin Core, MARC, and LC should still be maintained by libraries, as they are the basis for fulfilling various library functions.

Interviewees have alluded to the complexity of MARC vis-a-vis the simplicity of Dublin Core, noting that this relative ease-of-use comes at the expense of metadata richness. It was also pointed out that some standards, such as MARC, have been unnecessarily stretched too wide, in order to enable them to accommodate certain other genres of information objects. In particular, one interviewee had this to say:

“We now have a novel information landscape, but a standard that is anachronistic, whilst most OPACs lack interactivity, as they are essentially static. Currently, libraries are so fixated on such archaic standards that they look a little outdated when compared to search engines, such as Google. MARC is a complicated but rich, standard. In contrast, Dublin Core is simple but lacks descriptiveness and richness.”

Most interviewees are unanimous in stating that they find the OPAC out-dated, especially in comparison with most currently popular web search engines. In support of this view they point out for example, the fact that most OPACs do not seem to have an alternative spelling option. The absence of this and similar, seemingly simple, features makes the OPAC less user-friendly. In addition, most OPACs do not have features that enable users to rate, comment, review, or share resources with others, a serious shortcoming, in view of most users’ needs. Most interviewees asserted that they rarely use the library’s OPAC. One interviewee noted that:
“I’m not quite sure if I’m using the OPAC quite extensively as a catalogue [...] because somehow it seems to me that I’ve created my own personal library on my computer. I even like to call it my desktop library”.

Likewise, another interviewee expressed:

“The OPACs have a big problem in that they were instituted just to replace card catalogues [and] it didn’t evolve adequately enough with developments within the world of the Web. Hence the catalogues and other library instruments always tend to be a little behind when compared to search engines”.

However, one interviewee described the OPAC as the “biggest innovation for libraries that has ever happened,” although further suggesting that libraries are changing too slowly in trying to cope with users’ novel needs and expectations. The interviewee noted in particular that current cataloguing systems follow “a refined ways of cataloguing [oriented to assuring metadata quality]. Mistakes, for instance, are not allowed in catalogue searches. But, in reality, users make mistakes.” According to this interviewee, the search engine Google reflects reality better than those libraries that stick to strict cataloguing rules.

In a discussion on how the OPAC is performing in the current information landscape, one interviewee remarked that libraries are trying to catch-up, but:

“When things are no longer cool anymore, then librarians start doing them, [such as] implementing Web 2.0 features in the OPAC.” According to this interviewee, most OPACs lack interactively and are mainly static. Thus as a whole, as the responses from interviewees revealed, their preferences for Google-like search interfaces, in which a user is allowed to search with any combination of keywords. This is in agreement with a report prepared by Calhoun (2006, p. 5), who suggested that “large and growing number of students and scholars routinely bypass library catalogues in favour of other discovery tools, and the catalogue represents a shrinking proportion of the universe of scholarly information”. Further, Choy (2011, p. 65) argues that library catalogues are becoming inconvenient as they require users to accurately remember and submit bibliographic details such as author, title, ISBN or other details during the information retrieval process.

Another major limitation of OPAC systems has been singled out by Borgman (1996), who asserts that “most end users of online catalogues are perpetual novices who lack the requisite conceptual knowledge for searching”. Borgman (1996, p. 501) expounds on what she calls is an obvious disconnect between the assumptions made in the design of OPAC systems and users’ mental models. As Borgman points out these systems require users to formulate their queries in strict syntaxes but, more often than not, users face difficulties in translating their questions in to queries as required by the system. Similar problems are reported by Fifarek (2007) who contends that OPACs “function like they were still
running on mainframes, with their contents just one step away from the 3 by 5 inch [catalogue] cards”. Evans (2009, p. 14) provides examples of OPAC systems which are unforgiving for those users that are not attuned to the niceties and particulars of the bibliographic details of the book. In a recent study that investigated the search behaviours of customers in a physical book shop, Buchanan and McKay (2011, p. 277) reported that book buyers more often than not opt for “simple information seeking strategies and rudimentary query formulations”. According to them, most users’ search behaviour is characterized by the employment of unconventional metadata, such as the colour of a book (e.g., “I’m after the book by Andrew Marr - the thick blue one?”) or approximation of author names (e.g., “I think the author name finished with Ishky”), as well as the submission of incomplete titles (Buchanan & McKay, 2011, p.272). Furthermore, as reported in the study, subtle cultural cues in connection with a book have been found to be more pertinent to discoverability than its accurate bibliographic description. The responses from interviewees and also the literature reviewed indicate the importance of giving due consideration to the varying user preferences and information search behaviours. In this connection, Bates (1989, p. 421) observes the disconnect between search techniques used by users and what is expected of them by designers of database systems.

From the above, it is evident that users’ formulations of queries in search systems appear to be more nuanced, naive and deeply influenced by cultural and social cues. Buchanan and McKay (2011) and Choy (2011) contrasted this with the rather ‘crisp’ and accurate bibliographic description of information objects that are to be found in OPAC systems. Their findings clearly demonstrate the importance of reconceptualising current metadata systems in light of changing user needs, expectations and evolving vocabularies. Overall, since metadata constitutes an important function of libraries (Anderson, et al., 2009; Chan & Zeng, 2006; Day, 2003a, 2003b; Duval, et al., 2002; Nilsson, 2010; Pressley, 2005), getting the metadata right is a fundamental prerequisite for the achievement of their broader goals. The problems described above with regard to the current status of the OPAC can partly be alleviated by the inclusion of web 2.0 technologies such as socially-constructed metadata approaches to augment existing standards-based metadata systems.

3.2. Socially-Constructed Metadata Approaches
Responding to the use of socially-constructed metadata approaches in libraries, interviewees are wary of the lack of control and structure in Web 2.0 applications, including tagging. In connection with this, one interviewee reflected on how some Web 2.0 technologies come and go. The interviewee stressed the need for questioning the purpose served by employing a specific technology before adopting its use in library functions. The same interviewee cited the example of Second Life and how libraries had adopted it just to be part of Second Life, and hence librarians started creating their own avatars without addressing the rationale behind its use. Elaborating on experience, the
interviewee observed that, currently, the use of Second Life in libraries has diminished. Another interviewee also added that they do not foresee Web 2.0 technologies replacing the old systems of information organisation. Many interviewees pointed out that libraries should adopt Web 2.0 technologies, using them in parallel with their metadata standards schemes so that the two serve complementarily. Thus, they advise that libraries need not necessarily discontinue legacy systems or abandon current categorisation systems, as doing so would mean removing those users who utilise them.

In answering the question of how interviewees perceived the socially-constructed metadata approach, as compared to the standards-based one, one interviewee replied that they were not particularly a “big fan of the folksonomy and social web stuff.” The same interviewee expressed their belief in the superiority of a more structured system and the roles played by librarians in creating such structured systems. According to the said interviewee, they found it difficult to abandon their library-oriented view of the world, which, they added, might be biased. From the conversation, it became evident that, the interviewee did not totally dismiss folksonomies, as they later stated the probable usefulness of employing tagging as a compliment to legacy metadata usage. The interviewee concluded by observing that the social approach of tagging could be utilised side-by-side with structured metadata created by librarians. Nevertheless, the interviewee advised, the two types of metadata should be kept separate and be maintained at different levels, in such a manner that a user can switch from one approach to the other, as the need arises.

In a discussion focussing on categorisation and classification systems, one interviewee gave details of the techniques they use for organising their personal music and games collections on their own computer. For organising the songs, they rely on common, widely-used tags such as the name of the singer, the title of the song, the name of the group who plays it, the year it was issued, etc., which, they stated, did not pose any particular difficulties for them. The interviewee, however, mentioned their problem when trying to make sense of the differences among the various music genres defined by publishers. This is because, as the interviewee noted, music genres are very subjective, similar to an art collection. The problem, the interviewee indicated, arose from the fact that most genres reflected the requirements of American music radio stations; hence, some genres were irrelevant for their purposes. The interviewee pointed out “genres such as: Adult contemporary, Album oriented rock, Soft rock, etc are not meaningful for me. You may know what hard rock is, but soft rock is not that comprehensible”. As a result, the interviewee had had to re-organise the genres and rename some of them, based on information obtained from Wikipedia, which, according to the interviewee, has a system that better reflects their needs.

Another interviewee agreed that tagging is a good thing but expressed concerns regarding the absence of control, citing synonym and homonym ambiguities as
problems afflicting tagging systems. For example, the interviewee selected the term ‘Torino’, which may refer to a city, a football club or the car company in Italy – thereby creating ambiguities. According to the same interviewee, tags, by themselves, are not enough as they should be used with the more structured and organised metadata created by librarians. For this interviewee, the claim that tags should not have any structure and control does not make a lot of sense. The said interviewee noted that current tagging systems, such as LibraryThing, do seem to have some form of a structure, as for example the description of a book consists of standard metadata elements such as title, author(s), and publisher.

Another interviewee pointed out that Web 2.0 technologies such as social tagging bring similar information together and provide information that is very practical for and widely known by the lay community. They observed that libraries traditionally offered highly formalised knowledge, such as text books, but for daily usage, they said, they preferred using web search engines. A deeper grasp of the concepts and terms employed in a given topic of interest offered them the opportunity to coin keywords, for use in these search engines. Another interviewee remarked that they took a “softer” approach towards Web 2.0, in that they saw it as a useful approach for augmenting library functionality. Elaborating, the same interviewee spoke thus:

“If we are talking [about the fact] that the library is meant for users, I think we should not only consider taking users’ needs and wants into account, but they should also be involved when systems intended to serve are designed and developed”.

Similarly, one interviewee also expressed the view that Web 2.0 (social media) is important for practical applications. They cited, as an example, the world of gardening, about which, they said, they would be interested in discovering information that is expressed in terminologies of day-to-day usage and laymen’s terms, rather than in scholastic ones as found in books from libraries. One good example, they observed, was the use of standard metric units in formal text books, whilst most of these metrics are rarely employed in everyday language.

Contrary to the above, another interviewee pointed out that the current usage of Web 2.0 technologies in libraries has not been well thought out. As an example, they singled out the current usage of Facebook by libraries, whereby both users and librarians make postings. However, as the number of postings grows, searching and/or browsing through them become increasingly cumbersome. The problem, they opined, was that Facebook had not been designed to serve as a search engine. In addition, at present, most of libraries’ postings on Facebook are limited to such basic facts as opening hours and location. It is imperative that libraries employ Web 2.0 technologies proactively and strategically, instead of “adopting technology for technology’s sake”, they concluded.

Most interviewee indicated the importance of some control and structure in Web 2.0 applications. According to one interviewee, even Wikipedia, arguably
considered the freest and most democratic approach, has some basic rules and structure underlying it. The said interviewee maintained that which makes Wikipedia different is the fact that it has no scope. Nor does it have a rule stipulating “let us create these numbers of pages for these numbers of topics”. Wikipedians, they asserted, act according to the following maxim:

“Let us put everything out. If you want to add voice, you can do so. If you want to make the voice louder, you can do that too. If the voice stays [hushed], because nobody is contributing, that is ok. It is so heterogeneous.”

As the said interviewee explained, Wikipedia has aims, to at least present a neutral point of view. This, according to them, is one of Wikipedia’s few rules. Additionally, one should be able to convey other, even contrary points of views. Furthermore, Wikipedia also watches out for offensive language and imposes some writing style. Hence, according to them, overall, Wikipedia “is not completely devoid of rules and there is always a structure.” As further expressed by them, the case of Wikipedia demonstrates that a user-driven contribution can be allowed within a structure, albeit a minimal one.

3.3. Towards Mixed Metadata Approaches

In the metadata literature there are three broad positions with regard to the use of Web 2.0 technologies within libraries. Firstly, there are those that advocate a fully socially-constructed metadata approach. Authors like Shirky (2005) and Weinberger (2007) argue that current standards-based metadata systems are broken and hence, they suggest, should be substituted by an open, democratic, and socially-constructed metadata approach. The digital world, Shirky (2005) argues, is a radical break with the print and analogue paradigm as a single information object can now be categorised in an infinite number of places using hyperlinks. Shirky’s argument about the inherited limitation of categorisation from the physical world is also echoed by Weinberger (2007). Supporting the use of Web 2.0, Weinberger (2007) argues that, adopting the Aristotelian principle of “carving nature at its joints” through the use of taxonomies and controlled vocabularies to an increasingly chaotic and complex digital information landscape is a futile effort. Furthermore, as Shirky (2005) contends, standards-based categorisation systems (including Yahoo categories, Dewey Decimal and Library of Congress classification systems) are best fit for physical libraries, and goes on to state that pre-defined categories can only work for domains that have stable categories, limited collections, and clear edges. In addition, he argues such systems can only be functional in domains where there are expert librarians in the specific domain, who are able to describe the content for an already expert user bases. Both Weinberger (2007) and Shirky (2005) agree that, in the digital information landscape and in domains where there exists huge collections of information objects and where users come from diverse backgrounds, employing diverse numbers of terminologies in their search for information, pre-determined categorisation systems (standards-based
approaches) are very likely to fail to scale and become unwieldy. Consequently, they recommend the use of Web 2.0 and support the notion of individual users contributing content and metadata (Weinberger, 2007).

In contrast, the second position suggests the limitations of socially-constructed content and metadata approaches and contends that relying on a system where structure, authority and editorial quality are absent is likely to result in a sub-standard and chaotic information landscape. For example, Andrew Keen, in “The Cult of the Amateur”, (2007) dismisses the notion of user generated content and uncontrolled social media as amateurish and stresses on the need for control and regulation by an established authority. He argues that “what the Web 2.0 revolution is really delivering is superficial observations of the world around us rather than deep analysis, shrill opinion rather than considered judgment” and the consequence of this uncontrolled content, as Keen warns, is chaos and disappearance of truth (Keen, 2007, p.16). Keen argues that the unedited, uncontrolled and unfiltered content from Web 2.0 threatens the fabric of traditional quality controlled, edited, and guarded media. In a similar vein, Michael Gorman (2005), former president of the American Library Association, stated that the Web 2.0 in general and blogs in particular lack credibility.

The third, middle-of-the-road, position recognises inherent limitations in both approaches and contends that finding a middle ground could rectify some of these limitations. Authors such as Gruber (2007), Smith (2008), Veltman (2001) and Wright (2007) argue that a balance should be struck between the standards-based and socially-constructed metadata approaches. As Gruber (2007) argues socially-constructed metadata approaches are one-dimensional, plagued with inconsistency and lack of organisation, whilst, standards-based metadata approaches are forced upon users and fail to represent the users’ world views. Gruber (2007) suggests that ontologies should be developed to capitalise on the best of both worlds. At a conceptual level, Morville (2005) and Wright (2007), both information architects, contend that the two metadata approaches can productively co-exist. Morville (2005, p. 139) argues that “ontologies, taxonomies, and folksonomies are not mutually exclusive”. However, a closer look at Morville’s arguments reveals a tendency to suggest that socially-constructed metadata has its contextual place solely in the blogosphere and social media environments and not entirely in portals and digital libraries. This is also evidenced by his choice of terminologies, such as “mob indexing” for what is otherwise termed as social classification or folksonomy, elsewhere in the metadata literature. In his book “Ambient Findability”, Morville (2005) contextualises the theory of “Pace Layering” from Stewart Brand’s “How Buildings Learn” and argues that “taxonomies and ontologies provide a solid semantic network that connects interface to infrastructure” whilst folksonomies are overlaid on the taxonomic metadata infrastructure providing it with the fast-moving and volatile vocabularies of users (see also Campbell & Fast, 2006; Smith, 2008). Both Wright and Morville, renowned information architects, approach the issue of folksonomies with caution, arguing against the view that
folksonomies are fundamentally new ways of organising information. Others such as Campbell and Fast (2006) emphasise the importance of embracing Web 2.0 categorisation techniques. They contend “we ignore ‘mob indexing’ at our peril; by refusing to change our methods or our approaches in the face of collaborative tagging systems, we run a serious risk of allowing information architects to become anachronisms in emerging information environments”.

In connection with the above, one interviewee stated that the issue of using standardised approaches (such as hierarchies and categories) versus Web 2.0 technologies is more of a philosophical nature than a technological one. In support of this, the interviewee cited the literary work known as the “Divine Comedy”, by Dante, where the organisation of the poem reflects the theoretical (philosophical) framework of medieval European society. According to the said interviewee, the work is a complete summary of all the medieval beliefs and church teachings extant then. Furthermore, the division of the poems is well thought out, each category having 33 divisions, which, along with the introduction, brings the total number of categories to 100. They then contrasted this with the Dewey Decimal Classification system. The same interviewee remarked that both Dewey and Dante represented cultural frameworks of their societies and that they were correct in their own way. He noted that the situation now is entirely different “because there are too many traditions altogether and we don’t believe any more in a rigid, [monolithic], structure. We [do] believe in change.”

As noted by almost all interviewees, there exists some bias in current classification systems and standards. This is in agreement with Van House’s (2005) assertion that:

“Classification systems and categories carry their history within them, including the politics of the time and place in which they are created, and the participants in the decision making”.

Hence, it is important that information organisation systems reflect the diversity of users’ perspectives and interpretations of information objects that have been deposited in digital libraries. To this end, as Van House (2005) advises, the philosophical assumptions that underlie standards or categorization systems should not “valorise” one view whilst disparaging others. In their oft-cited book, “Sorting Things Out: Classification and Its Consequences”, Bowker and Star (1999) contend that “each [classification system] and each category valorizes some point of view and silences another” which they admit is inescapable but nonetheless such limitation should be taken into account and its ultimate consequences should be carefully weighed. To this end, the decisions to choose one metadata approach over another or the choice of standards or perhaps the absence thereof should be undergirded with sound theoretical foundation.

Overall, as the responses of the interviewees and a review of the literature demonstrate, the implication of Web 2.0 technologies for library metadata
functions merits a closer examination. This paper, whilst concurring with the mixed metadata approach, as recommended by Morville and Wright, advocates that socially-constructed metadata should have a viable, substantive, place in digital libraries. To adopt mixed-metadata approaches, integrating the two approaches remains a big challenge. In this regard, it is important to explore the opportunities presented by Linked Data and its associated technologies such as the Resource Description Framework (RDF) and the Web Ontology Language (OWL).

3.4. Slow Adoption of Linked Data in Libraries

Another question posed to interviewees was the role of Linked Data for metadata functions in libraries. After acknowledging being aware of the visions of Semantic Web technologies, many of the interviewees confessed to being unaware of any Semantic Web (also referred as Linked Data) application appropriate for use in digital libraries. One interviewee expressed their belief that Linked Data would offer solutions to the problems that they had previously highlighted during the interview, including cataloguing and storage of information in a manner that can be searched semantically. Within this context, the interviewee foresaw “Linked Data” becoming an effective method of metadata representation, at the most discrete and atomic data level. They continued saying that, “You just describe at the meaning level and then create associations. Such meaning will lie not with the object itself but on the context of the associations. The OPAC should be more robust and allow natural language searches.” Similarly, another interviewee characterized the Semantic Web as: “A system built on meaningful relationships between topics. The world is modelled in words. And then you can see the relationships between the words and what kinds of relationships there are. It is a good technology but I don’t see libraries using it. And I don’t currently see a proper Semantic Web”.

Another interviewee stated that they have heard a lot about the Semantic Web but hasn’t come across any real instance of its application in libraries. Yet another interviewee described the Semantic Web as a system in which one resource describes another but he says resources. They added “to tell you frankly I [have] never used any Semantic Web application. But I think from what they say, it would be quite a difficult task”. One of the interviewees portrayed the Semantic Web as an “an awesome idea” but expressed their reservation as to whether they would at all need agents proposed by Berners-Lee, Hendler, & Lassila, (2001), who had envisaged a role for semantic agents in facilitating such tasks as coffee making and fixing appointments. Most of the promises of the Semantic Web, according to a recent review by Powell, Black and Collins (2011), “have yet to be fulfilled”. It is perhaps worth mentioning here that Thomas Gruber, who is mainly known for his oft-cited definition of the term ontology (i.e., “an explicit specification of a conceptualization” (Gruber, 1993)), has for so long been advocating the role of semantic agents not from an artificial intelligence point of view but from ontology-based metadata specification of concepts, objects and its relationships. It is also important to note here that
Gruber is also behind the development of the Siri software, a semantically intelligent virtual personal assistant, which uses Semantic Web technologies.

Most interviewees acknowledged the potential use of Semantic Web technologies for information organisation and access. In connection with this, one interviewee called attention to the technical complexity of Semantic Web technologies. Linked Data, the same interviewee observed, is an important part of the Semantic Web. This interviewee also predicted that Semantic Web will be more popular in the coming five years. The said interviewee’s prediction doesn’t seem to be farfetched, given the fact that these technologies have promised to provide concrete solutions for metadata representation and utilisation as early as 2003 (Day, 2003b) and subsequently in 2008 (Rothenberg, 2008). Another interviewee concurred, stating that they understood the Semantic Web as a concept, but stressed that the technologies associated with it should be taught in computer science departments. They foresaw applications ensuing from a wider deployment of these technologies, for which development and acquisition of new skills, by both students and users is a prerequisite.

It is important to note here is that, reading through its origins, it is evident that the Semantic Web has also been about metadata. In January 6, 1997, Tim Berners-Lee wrote a proposal entitled “Metadata Architecture” and defined metadata as “machine understandable information about web resources or other things” (Berners-Lee, 1997). It is also apparent that the use of the word metadata in the author’s initial proposal refers to what later came to be known the Resource Description Framework (RDF), which was subsequently approved by W3C in 2004. Berners-Lee argues in favour of maintaining the centrality of metadata. He points out that metadata about one document can occur within itself, within a separate document, or may even be transferred accompanying the document; metadata can describe metadata (in other words metadata about metadata); and that different things may be asserted of the same thing and may stay independently or in combination (Berners-Lee, 1997). His concern was mainly of metadata to describe web-resources. He was also primarily interested in defining machine process-able metadata for data and documents, providing meaning and context through typed relations; which is tied to his vision of the Semantic Web as described in Berners-Lee, Hendler, & Lassila (2001).

It is worth noting that as recently as in 2011, some national and regional initiatives such as the British Library, the National Library of France, and The Europeana Digital Library have announced their plans to open their legacy bibliographic records as Linked Data (Helen, 2010). A report commissioned by the World Wide Web Consortium (W3C) is published in October 2011 (W3C, 2011). The report acknowledges the low uptake of Linked Data in libraries whilst providing recommendations for libraries to embrace the Linked Data principles which, among other things, includes the use of technologies such as URI, RDF, SPARQL, and OWL. The report states the importance of making
bibliographic library data openly and freely accessible in a form that is “shareable, extensible, and easily re-usable” (W3C, 2011).

The Semantic Web has not made significant strides in the library domain, nonetheless the potential role of Semantic Web technologies such as the Resource Description Framework (RDF), RDFS (RDF-Schema), and Web Ontology Language (OWL) for metadata encoding, representation and sharing is clearly evident (Day, 2000, 2003a, 2003b; Nilsson, 2010; Rothenberg, 2008). It has been demonstrated that RDF’s simple data model enables the creation of semantic links among information resources. An RDF schema adds vocabularies – such as Class, SubClass, Domain, and Range – to enable a more meaningful representation of resources. By extending RDFS with yet additional vocabularies, OWL allows the definition of additional semantic constructs, such as equivalency, inverse and cardinality relations and constraints (Allemag & Hendler, 2008; W3C, 2004). One of the defining features of the RDF model is its ability to identify resources and metadata attributes (relations) uniquely and globally using Uniform Resource Identifiers (URIs). The use of URIs for metadata element names, labels, and relations, according to Nilsson (2010), helps to avoid naming and identification conflicts in the use of elements. This is also suggested by (Alemu, Stevens, & Ross, 2012), Day (Day, 2000, 2003a, 2003b) and Rothenberg (2008). Unfortunately, although there happen to be several academic papers and technical specifications regarding RDF, RDFS, SPRQL (SPARQL Protocol and RDF Query Language), and OWL, there are, up until now, no viable Semantic Web related metadata solutions in widespread use. In a more positive note, Gruber (Gruber, 2007, 2008) argues that Web 2.0 and the Semantic Web (Web 3.0) are complementary and hence can be leveraged to provide unique and enriching user experiences.

3.5. Conclusions
The interviewees characterised the current state of the OPAC as being anachronistic, especially when compared with contemporary search engines. It has also been reported in the literature that there is a disconnect between the designs of OPAC systems and the searching behaviour of users. Interoperability problems among disparate digital libraries, arising from the proliferation of metadata standards, have also been brought to light by several interviewees in the domain. It has also been suggested that existing standards-based metadata systems be re-evaluated, especially in light of socially-constructed metadata approaches. Whilst, it has been remarked that these two metadata approaches do not stand in opposition to each other, interviewees have recommended that, libraries should embrace Web 2.0 technologies strategically, rather than adopting it for the sake of the technology. There is consensus among them that, in as far as they would like to see the adoption of the Linked Data, there is still a lack of applications that serve libraries. It is, however, anticipated that, once Linked Data is implemented and adopted widely, the Linked Data has a lot to
offer for metadata representation and exchange. It has also become apparent that the primary challenge facing librarians today is, to first of all place users at the centre of all information organisation decisions, and to that effect, ensure that metadata systems reflect the world view of their users in terms of representing various perspectives and interpretations.

In view of all the above, in this paper it is argued that there is a need to reconceptualise current metadata systems in light of changing user needs, expectations and evolving vocabularies. Hence, it is deemed essential that the creation and utilisation of metadata be underpinned by sound theoretical frameworks. A conceptual metadata framework that caters for the inclusion of socially-constructed metadata approaches is therefore proposed. It is imperative that such a metadata framework takes into consideration the conceptual foundations of current Web 2.0 technologies as well as recent developments in the Linked Data. These should include, but not be limited to, Bush’s concept of associative trails (Bush, 1945), Berners-Lee’s Linked Data (Berners-Lee, 1997; Berners-Lee, 1998; Berners-Lee, et al., 2001), O’Reilly’s collective intelligence (O’Reilly, 2005) and Anderson’s long tail (Anderson, 2006). In the context of a socially-constructed metadata approach, especially relevant is Paul Otlet’s vision of “the social space of documents”, where after reviewing the efforts of Melville Dewey’s DDC and Panizzi’s cataloguing scheme, Otlet came to conclude that such tools only guide the reader as far as the location of the book but not to the contents within and also relationships between documents (Wright, 2007). Otlet thus envisioned a system called the “réseau”- a tool to create semantic links between documents and keep track of the annotations made by readers, eventually forming new trails of documents, which he calls “the book about the book” (Wright, 2007). Thus, in conclusion, with a view to improving current library metadata functions (such as the OPAC), Paul Otlet’s vision of “réseau” matches the interviewees’ expectations and should be implemented and widely adopted. In this connection, structured metadata should not only consist of the physical description of information objects (such as author, title, ISBN, subject, format, etc) but also incorporate elements describing its socio-cultural facets (user tags, comments, reviews, links, ratings (likes and dislikes), recommendations). In other words, the representation of the social space of metadata should be considered as equally important as the recording of standardised and objectivistic metadata elements that have hitherto been used to characterise the physical characteristics of information objects.

References


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An effectual approach for a data and information management for humanists

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Abstract: We present a generic database schema enabling different contextual points of view on a heterogeneous mass of scientific data and information within a multidisciplinary research environment. We present a method with which scientific data can be stored in a self-defined set of entities and relations, so that it becomes possible to represent the context for each research question in its own conceptual ER schema within one single relational database and without changing any involved schema. Acknowledged ontologies as particular schemata, involving bibliographic, biographic, or artifact information, can be included. The intersection of the metaphorical sphere within texts, feature specialties of material artifacts, and geographical terms allows a congruent text-artifact-map-transformation. Examples shall illustrate the breadth of our approach.

Keywords: information and knowledge services, e-science, databases, ontologies, knowledge mining

1. Introduction

An effectual approach for a data and information management for humanists has to be aligned with the researchers themselves. Humanist researchers define their aim of work by formulating questions based on texts, pictures, or artifacts, and, at the same time, by conceptualizing (more or less elaborative) philosophical questions.¹ The fluctuating intersection of the metaphorical sphere within a textual document with self-defined artifact information plus spatio-temporal relations is dependent on a particular research question. Humanist scientists tend to build up an individual database in order to conduct their semi-quantitative (and semi-qualitative) research study. It becomes important for them to create or even reuse an own corpus of texts, and to arrange any other set of entities that are intended to be analyzed through the eyes of a specific problem. Nevertheless, it is inadequately for their work to rely only on metadata provided by library catalogues, or archives and museum inventories, yet it is needed.

Unfortunately, it is often the case that humanist researchers install their particular databases as a basis for their studies just for their own purposes. It is unusual to share own data and information with other researchers because

¹ Förster and Thalheim (2011).
differences between individual research questions and approaches require
dissimilar databases. Singular problems involve an own methodology, or the
foundation of a specific approach. Mostly, having recent humanist doctoral
projects on a watch, the databases are of simple structure and not very
sophisticated, although aiming at answers for a certain question. The researchers
tend to abstain from relations to relevant sources and put all information into a
single database sheet. If they use library, museum or archive information, they
have a tendency rather to copy metadata information from relevant catalogues
(if applicable) than to enrich their data by including references to standardized
vocabularies. The insertion of heterogeneous metadata from the indexing
practice of libraries, museum documentation and finding aids from archives into
a comprehensive database is one aspect to be solved. Mainly, catalogues still
remain repeatedly only information supplier in terms of completing a certain
corpus. The most probable outcome of humanist research is monographs, or
volumes with single-authored papers, having no need to provide a database
foundation as with geoscientific data for example. Humanist scientists keep their
findings for future publications within home-made and long-lasting archives.
So-called “Virtual Research Environments” (VRE) are appropriate for a
particular discipline. VREs for large research communities are asked to be
enhanced as generic infrastructure with modular and flexible services according
to recent studies. In this respect the focus of those achievements lies on
reference management, on instruments which support publication of data, and
on applications for an unconstrained and fast communication (e.g. wiki, blog).
But that is not intended with the present study.

Our approach attracts notice to the researchers’ databases containing research
data and information which is relevant for data processing. The analysis of texts
or artifacts results in an assorted schema of particular features. Their assemblage
is driven by individual requirements. It is important for an inter- and
multidisciplinary research environment to tackle the problem of data storage and
processing from a more abstract point of view, and also from the beginning. This
is the initial position for a data and information management for humanist
projects within the Graduate School “Human Development in Landscapes”
(Kiel University, Germany) which is tied together by a research question
crossing traditional borders of disciplines, claimed as “to detail the interactions
between mankind and both its physical and perceived environment.”

The paper is organized as follows: In section 2 we detail specific goals,
methods, functionalities, and modules of the humanist database. In section 3 we
handle exemplary research projects from our related doctoral programs to
demonstrate the capabilities of the planned research data and information

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2 Horstmann et al. (2011, p. 355).
3 Fleischer and Jannaschk (2011).
4 http://www.uni-kiel.de/landscapes/index3.shtml
infrastructure. Achievements are shown in section 4 together with a conclusion for possible future lines of research.

2. Goals, methods, and functionalities

Central aim is the development of a database concept which supports a data and information management in the humanities in an efficient way. Our approach comprises a Service Oriented Architecture (SOA) with certain web services integrated within a generic database application. Those web services are on the one hand tools for georeferenced data, i.e. gazetteers, visualization services and (2D-, 3D-)map creators (Web Coordinate Transformation Service, Web Feature Service, Web Coverage Service, Web Terrain Service, and Web Map Service). On the other hand we develop a structured meta-information system for including citation and bibliographical information, artifact information, and statistics. For this reason, singular research projects shall borrow features from metadata schemata of various proveniences. Connections shall be made for information about persons (by accessing the Virtual International Authority File⁵), about geographical terms (appropriate tools will be developed, according to Nolde et al. 2010), and about bibliographical items (e.g. WorldCat⁶). All research database information can thus be enriched by supplementary information provided via access points to intellectual or artistic contents within the digitized bibliographic universe.

The configuration of those features (in respect to the specific research question) is singular in any case. And as the focus or even one aspect of the research question changes, the database element set should change as well.⁷ Our generic database solution will be developed as generalization of the CIDOC CRM⁸ specification. It will be realized as one simple relational database which enables singular researchers to create particular conceptual entity-relationship (ER) schemata out of the demands of CIDOC CRM and also own needs.

Database structures used in humanistic research are typically simple. The database tables use a small number of attributes for property description. These tables are interlinked in order to associate data with each other. The tables themselves are populated by a small number of rows or objects. At the same time the research portfolio drives the utilization of many different tables. The research portfolio evolves over time. The interest of the researchers in their data changes, too. This behavior results in a large set of different tables with small data sets. Thus, database applications become quickly unmanageable, difficult to use, deploy, and query. For that reason, complex legacy schemata are created, but their maintenance is often heavily delayed.

⁵ http://viaf.org/
⁶ www.worldcat.org/
⁷ Terwilliger et al. (2010) presents an analogue example for object-relational mappings.
⁸ The Conceptual Reference Model (CRM, ISO 2006:21127) has been developed by the Comité international pour la documentation (CIDOC), www.cidoc-crm.org.
⁹ Jannaschk et al. (2011) and Bienemann (2008).
We developed a simple approach for storing such data. All data is maintained in a common repository that accepts data rows as triples consisting of a unique row identifier, a pair representing the structuring (relation name and attribute name) and a value that is used for that attribute within this row within the given table. This structure is called generic structure. Therefore the row (4711, Name="Thalheim", Institute="CS", Phone="4472") in the table PERSON is represented by three triples: (4711, (PERSON,Name), Thalheim), (4711, (PERSON,Institute),CS), and (4711, (PERSON,Phone), 4472). These triples contain the same information as the row. At the same time they can be stored in a simpler fashion. We might use an equivalent approach for storage of associations among data objects and might also enhance the triples with additional data. For instance, the mentioned row – when inserted by “Förster” – is represented by (4711, (LOG_INSERT,Issuer), Förster). Therefore, our approach is also capable to store metadata, i.e. the data about data.

Whenever a researcher wants to add a new table, then the profile of the table is used for the introduction of two special generator functions:

- a storage function allows to generate the triple mapping for each object;
- a retrieval function allows to reconstruct the original object from the triples.

These two functions are supported by any database management system since they can be specified as views defined over the database structure. The classical approach for an evolution of database structures results in a revision of the entire database system, in recoding and rearranging the storage engine. If an application is characterized by eager changes whenever necessary, then classical database technology cannot handle it.

Our approach is based on a separation of concerns (SoC). We separate storage from deployment of data. Classical database research combines both. This combination was mainly caused by the limitations of technology until 2000. Nowadays, machines are faster and storage facilities are far more advanced. The SoC may also be supported by two special machines: a **generic storage machine** which uses our approach and a **computation machine** that orients on high performance computation and is fed by the storage machine. Both machines may be decoupled. It seems, however, that such separation is limiting the user in deploying data in a sophisticated form. Data are often not only retrieved and selected row-by-row. Users want rather to see their data in a changed structuring, with some specific display and based on some computation. If we would use the approach presented so far, then we would have to transfer such requests to the computation machine. This would lead to a heavy burden for the programmer.

However, we can provide another solution.\(^\text{10}\) Actions that are bundled together can be represented as short stories within the application, so-called *mini-stories.*

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\(^{10}\) Similar solutions have already been developed for web application systems (see Schewe and Thalheim 2007) and non-relational data stores (Amazon SimpleDB 2009).
They are represented by graphs that connect simple steps. A simple step is either a storage step or a retrieval step. Therefore, we may now use such a mini-story for a generation of a transaction that operates on the storage machine. The mini-stories may be combined to larger ones, e.g. research stories, characterizing the methods of a humanist scientist.

We can now represent mini-stories and research stories of users within the user space. Each user has a specific profile consisting of the data structures addressed by the researcher and of the stories employed by a user. The user space is assembled whenever a user initially uses the system. It can also be modified whenever there is need for it. Furthermore, we may assign roles to users. These roles are associated to some of the mini-stories. Therefore, a user can choose (together with the login into the system) the current profile within the available profile so far. An example of a mini-story is a search function. It turns out that there are seven different kinds of searching ranging from zapping and browsing to property-value-driven targeted search. Therefore, we must specify first which search function is meant. Depending on that search function we choose a mini-story, supported by corresponding web interfaces. The same approach can also be used for insertion and modification of complex data. We may use a pattern approach for such functions. We observed a small number of insertion patterns and a small number of modification patterns. These patterns can be combined to mini-stories and thus be supported by the generic storage machine.

It seems that the initialization becomes a bottleneck within our solution. This is however not the case. A user may select the mini-story which fits best to the needs. This mini-story is then taken to the user space and becomes an element of the user profile. Whenever a user wants to change the profile, then we might use the same approach to support that. If a user does not find an appropriate mini-story, then we start an extension of the generic facilities.

Our approach has a number of advantages. We can very flexibly react on new requests. We may support any data structuring, mini-stories and research stories. In the classical setting such tasks result in programming tasks which often require support by specialists since humanist researchers might not have deep skills in programming languages such as SQL. In the SQL setting the user may write the query on fly. We prefer a good support for each user.

We may also collect all tasks in a repository which users want to perform with the system. This repository is a collection of generic functions, mini-stories, and research stories within a community of practice. The course of actions would be as follows: A user requests a specific function. This function is mapped to the support facilities. All other users may now want to add these support functions to their profile after the derivation of the new support facilities. Our approach allows therefore the development of community-specific procedures. As a result,

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12 Feyer et al. (1998).
we may use this approach for the creation of a community workspace. This workspace is continuously evolving as long as the community is active. We are currently developing an approach to deliver this system as open source solution. In this case any other group of researchers may download the system, modify it according to the rules of open source communities and use it for free. The limitation of our approach is also obvious. We do not target applications that must handle “big data” in a very efficient way. We also do not target high performance web services. Instead, we want to be evolution-robust and allow the handling of very complex schemata as well.

### 3. Example Projects

The current section provides details about exemplary projects pursued within the framework of the Graduate School “Human Development in Landscapes”. The researchers challenge archaeological and natural science data with a literature survey in order to conduct philosophical elaborations enriched by a quantitative basis. This multitude of approaches fructify a particular research question from different scientific viewpoints, dealing with the perception of a specific geographic area (landscape) from prose texts or research literature in conjunction with bare facts derived from corings, measurements, or excavations. The data and information management supports the merging of both approaches. The first exemplary research project is dealing with animal dissemination across the Mediterranean in Ancient times. Ultimate goal is a map which shows the movements of animals as result of economic transactions across the area. The material comprises excavated animal bones, and relevant site reports about it. The taxonomy of animal species and osteometric data of skeletal elements is of high importance. Conclusions about certain subsistence strategies or ritualistic acts can be drawn with combining individual provenience information in contrast to find places while considering archaeological features and age determination. The humanities database allows linking both features from faunal assemblages with findings in ancient literature. The vagueness of information in literary resources (spatial and temporal context) can be substantiated with more precise data from excavations and measurements.

The second exemplary research project sheds light on the interpretation of villa images from Roman times. Ancient villa mosaics or paintings do not only depict the house itself, but also trees, animals, gardens, and other landscape elements. But it is important to know that they stay an artistic creation and thus are always evidence of an imaginative act. That means that there is a high variability in whether those villa images show a realistic copy of an actual villa or a dream-like, ideal composition. A formal description regarding standardized typologies is foundational for the respective database which is filled with the combination of all pictorial elements plus information from literary accounts, and amended by data from pollen or soil analyses from the surface of the possible place of the depicted villa. It results in conclusions about architectural developments, distribution of flora and fauna, and “concepts of life”.
The third exemplary research project heads for a map of the island of Menorca providing information for all archaeological find spots from excavation reports and literature sources. The respective statistical database comprises a self-defined set of features in order to allow empirical generalizations about certain prehistoric monuments in conjunction with their demographic, ecological, economical, and geographical embeddings.

The fourth exemplary research project tries to reconstruct the environmental history of the Peloponnesus.\textsuperscript{13} The region has been famous for the labors of Heracles in ancient Greek times with the outcome of a diversity of written records of both poetic and prose texts. Poetic texts refer mainly to the mythological history. Although landscape descriptions are included here to a certain degree, they are more vividly present in prose texts. Several lakes, like Lake Stymphalos (Λίμνη Στυμφαλίω), provide an ideal situation of detecting the landscape history by retrieving sediment cores. Particular events (e.g. volcano eruptions) are still present in the cores and can be linked to relevant descriptions in literature. The database infrastructure allows a simple combination of both aspects by interconnecting particular spatio-temporal features.

The fifth exemplary research project is doing a bibliographic survey of the publication history of the English author Joseph Conrad (1857–1924).\textsuperscript{14} The inclusion of FRBR elements into the data model is of high significance here, and a spatio-temporal presentation helps in identifying and tracing certain lines of thoughts and developments within the reception history.

4. Achievements and Conclusions

To support small-scale projects of humanist researchers effectually, it is needed to consider their specific methods of working. As they often conduct long-lasting research processes it seems valuable to maintain evolving database schemata. As they often use databases of simple structure it seems appropriate to provide a suitable infrastructure. And as singular steps of storing and retrieving data are similar, they can be split up into adequate mini-stories; and several mini-stories can be coupled with each other to gain equivalent research stories. The scientists develop their databases in close cooperation with a programmer.

It is also aim to pull together initiatives from libraries, museums and archives with humanist activities having a university background to gain a multiple perspective of research. Our data and information management acts as a mediator between both spheres, enhancing unique research questions from both viewpoints. The appropriate integration of standardized information (geospatial, bibliographical etc.) due to its implicit need has to be guaranteed.

Our approach still supports individual humanist research, but sets the individuality free in transferring it into a shared research environment embedded

\textsuperscript{13} Unkel et al. (2011).
\textsuperscript{14} Förster (2007).
within the achievements of scientists having similar interests and also within the efforts of cultural heritage institutions.

References


The Cost-Benefit Factor: 
A Tool between Management and Marketing

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Abstract: Today, scientific libraries have to serve a whole range of customers including collaborative partners, third-party funding agencies and political authorities. Funded by public investment, libraries have to deal with the question of their added value for the knowledge society. Up to now, the responses have been more concentrated on the qualitative rather than the quantitative aspects. The contingent valuation method will give an answer.

Keywords: Cost benefit-factor, contingent valuation, market research, added value

1. Introduction
The TIB, as the German National Library of Science and Technology, plays an important role in Germany's research infrastructure. Within its fields of engineering, architecture, chemistry, computer science, mathematics and physics, the TIB is worldwide the largest specialised library. It has been an important provider of literature and information for over five decades at an internationally competitive level. This is based on unique collections of essential and highly specific technological and scientific specialist literature across all media. Furthermore, the library conducts numerous research and development projects on digital libraries.

The TIB is an institute of the Leibniz Association which is one of the four large science organisations in Germany (apart from Fraunhofer and the Max Planck Society). Every seven years, all the members are evaluated by an independent, external panel of experts who examine strategies, services and management methods. Both the results of the experts and the Leibniz Association Senate’s statement are used at the German Joint Science Conference for the assessment of further funding requirements. The worst case scenario can lead to the closure of institutions and facilities.
Annually, around 23 million euros are invested into the TIB by the federal and state governments. In the German library scene, this sum does admittedly amount to a great deal of financial support from the funding agencies, but how long can this level of funding be maintained?

2. Motivation and Aims
To measure a company's return of investment is customary, but what is the ROI of a library? A large sum begs the question of whether this public investment is justified. The TIB wanted to know if there is any evidence of added value for the knowledge-based society. Is the library really that useful to its target groups of researchers and developers in the economy and the sciences as it thinks it is and, furthermore, is this benefit quantifiable and thus verifiable? In short, is the large investment made into the TIB worthwhile and how much is a scientific library worth?

In order to answer these questions, the TIB conducted an online survey which followed three aims:

Firstly: Find out about the structure, industry sectors, typology of and usage by the customers, as well as the products and services used.

Secondly: Formulate an added value of the TIB in financial terms and find out how much the TIB is worth to its customers in financial terms. In 2009, the budget was 24.5 million euros, from which 19.5 million euros were allocated from the Ministries; 2.1 million euros came from our own income from the services the library provides and 2.9 million euros from third-party funding from various EU and German Research Foundation projects, as well as other funding organisations. The aim was to provide politicians and ministerial funding bodies with an important fiscal argument for the high operating costs of the TIB.

Thirdly: Support of the library's strategy and its intended path. The TIB is the world's largest specialised library for technology and science. In this radically changing technological, scientific and political environment, it is not just expected to fulfil its traditional function and to make its collections available in both printed and electronic form; it is also expected to develop new fields of activity. This involves, for example, the provision of appropriate infrastructures no longer just for textual materials, but also for multimedia materials, such as research data, films, images, sounds and 3D animations. The access to all collections, irrespective of shape, place and time, must be guaranteed in the long term. The integration of open access publications should also be promoted. These new strategic fields of expertise have already been the focus of the TIB for some time and, in the future, together with national and international partners, associations and networks, it will continue this focus in a more targeted manner. Do customers also see the aforementioned areas of work as being relevant to their scientific work processes?
The timing of the study was deliberately chosen to be 2009/2010 as, at the beginning of 2011, the evaluation of the TIB by the aforementioned Leibniz Association's panel of experts was imminent. So close to this evaluation, a good result of this study was sought and would indeed be helpful.

3. Procedure
In 2009, the TIB commissioned the market research institute, TNS Infratest Business Intelligence, to carry out a customer online survey which took place between November and December 2009. A total of 663 TIB customers (random sample) completed the online questionnaire which consisted of 45 questions. The average interview duration was 13 minutes, the evaluation, of course, anonymous.

4. Results Part 1: Customer Typology
We want to briefly discuss the customer typology here in order to be able to categorise the TIB.

The 663 customers who took part in the survey are a representative cross-section of all customers. 44% of them work in the private sector. A good third of these are employed in large companies with over a thousand employees. The customers primarily come from mechanical engineering, the chemical/pharmaceutical industry, electrical engineering and automotive industry and suppliers. 29% of all customers are attached to (non-)academic research and teaching, 14% to other state institutions, such as libraries and administrations.

On average, 68% of customers have been using the TIB for four years and longer, 52% already for seven years and longer. 30% became customers in the last three years, and 47% have called upon the TIB at least once in the last month.

The customers believe that the library offers a high level of service. 76% indicate that deliveries are quick and reliable, 74% that the collection is current and comprehensive. These are the two most important reasons why customers continue to use the TIB on a frequent basis. At 81%, the delivery of documents and interlending is by far the most used service within the TIB. The information obtained from the TIB is required within the field of research and development in three out of four cases.

5. Results Part 2: What is the added value of the TIB?
In a new type of project approach, the TIB decided to join up with TNS Infratest Business Intelligence to determine its benefits both for the individual but also for Germany as a centre of scientific activity. For these purposes, we reverted to the “Contingent Valuation”.
This is a special technique based on the stated preference theory in which customers are asked to give an assessment of the value of the library in financial terms. This technique reveals preferences for goods for which no real market exist. The contingent approach is based on the assumption that a certain willingness to pay also exists for non-market goods.

The basis of any contingent valuation is a carefully drawn-up questionnaire. In general, all surveys are based on five types of questions. Let’s have a look at the results of the survey among the 663 customers of the TIB.

**Investment in Access**
At the beginning of the survey, the customers were asked to quantify their monthly expenditures for the TIB in euros. Furthermore, questions were also asked on “Investment in Use” in order to differentiate between “power users” and “occasional users”.

- 60% of all TIB users order between one and ten documents per month. The most intensive users come from the private sector.
- For 75% of users, the TIB services can be used quickly. That means that they spend less than one hour per day using the services. Just over a quarter of the public institutions spend more than one hour per day.

These questions were placed at the beginning of the questionnaire because they are easy to answer. This “baseline measurement” lays the ground for all subsequent questions. This allows the respondents to deal realistically within the future scenarios presented to them later on.

**Cost of Alternatives**
The respondents were then asked to estimate their additional efforts and costs they would have in the unlikely event that the TIB no longer existed. The respondents gave the following estimates:

- If the TIB no longer existed, 57% of the customers thought that their work would be "somewhat affected". 30% thought that their work would be "severely influenced".
- All customer groups would expect increased efforts in terms of time. Without the TIB, 54% of all respondents would have to use up to 25% more working time and accept additional costs (without personnel costs). 16% would have to spend up to 50% more working time or even more.
- If the TIB’s services no longer existed, a third of the respondents would not expect their costs to change. 42% of respondents would expect an increase by up to 25%. 16% would expect their costs to increase by between 26% and 50%. 6% of respondents would expect their costs to at least double. 7% estimate a cost increase of between 51 and 99%.

The questions on the level of impact, the working time and the additional costs prepare the respondents for making realistic financial estimates. They make it
more probable that the respondents will give well thought-out and honest answers when they have to say how much they would be willing to pay if the framework conditions for the provision of the TIB services were to drastically change.

**Price Elasticity of Demand**

The first question for which the respondents had to provide a financial estimate was as follows: "Please imagine that the prices for the TIB service packages increase by 50% on average. How do you think this would probably affect the way you (or your organization) use(s) the TIB?"

- 45% explained that their usage pattern would remain unchanged.
- 23% would reduce their usage by 1% to 25%.
- 16% would reduce their usage by 26% and 50%.
- 10% would reduce their usage by more than 50%.
- 7% would stop using the TIB altogether.

Public institutions would demonstrate the strongest response to a drastic price increase, namely by reducing their usage by 62%.

Does this result mean that the TIB could increase its prices by 50% without suffering any financial losses? No! This is strongly supported by the answers regarding their own willingness to pay (see below). It is also argued in specialist literature that true preferences are only revealed when respondents believe that they have to pay the amount they have specified out of their own pocket.

**Willingness to Pay**

Various questioning techniques can be used to ascertain the respondents' willingness to pay. If public funds were no longer available for the TIB, would those questioned be prepared to pay a specific amount themselves on top of the current expenditure to ensure that the TIB survives? The key results to this question are as follows:

- 19% of respondents could imagine their own institution directly funding the TIB on a regular basis.
- A quarter of the respondents cannot imagine doing so. The corresponding percentages are 28% for private sector institutions, 27% for public institutions and 22% for academic research and teaching institutions.

For this question, the respondents were proactively informed that it was simply intended to help assess the TIB's value. It was not to be assumed that the library's funding was at risk or that it was considering increasing its prices.

In the previous open-ended direct question no amounts of money were mentioned in order to avoid influencing the respondents. Although the question looks simple at a first glance, the respondents were often unsure. Also in this
survey, 56% of all respondents answered the question on their willingness to pay more with "do not know".

Willingness to pay, as indicated in the open questions, is underestimated and hence too low. A "bidding game" question on an auction basis with specific payment suggestions was therefore part of the survey. The question was: "Does that mean that you or your organization would not be willing to pay for example 10 percent more, to ensure the survival of the TIB and its services?"

- In response to this question a further 23% of respondents, in addition to the 19% of respondents in the previous question, were willing to pay the aforementioned additional sum.
- Customers who answered this question with "No" (23%) or "Do not know" (54%) were asked to indicate reasons. 42% said that they had no responsibility for the budget. 36% thought that the TIB's services should not become more expensive. 32% believed that the TIB should be funded purely by public money. 23% said that the TIB is useful but that they could not afford to pay an additional ten percent each month. 12% felt that a price increase of ten percent would not be justified.

As a consequence, in an open-ended direct question, those questioned were also asked to imagine a world where there are no budget restrictions. If this were the case, how much more would the customers be prepared to pay the TIB?

- The respondents answered that they would be willing to pay on average 24% more. 50% did not answer the question. 24% could imagine increasing expenditure by up to ten percent, whereas nine percent could imagine increasing expenditure by up to 20%. 4% would be willing to increase their expenditure by up to 30%, 0.2% by up to 40%, 3.8% by up to 50%, 0.2% by up to 80% and 2.8% by 81% or more. 7% refuse to pay more.

In a follow-up question, the respondents were asked to justify why they would not be willing to pay more.

- A quarter of the TIB customers surveyed said that they were not authorized to make such decisions. 15% said that their organization had to make spending cuts. A quarter felt that the TIB's current prices were appropriate. 8% pointed out that the competition was cheaper in this case.

For the follow-up question "Having thought about your reasons for your answer, would you like to stick with the figure you gave or correct it?" the key results were as follows:

- 94% or respondents stuck with their answer. 1.7% didn't want to make any further changes. 4% changed their answer. 1% was willing to pay between 11% and 20% and a further 1% was willing to pay 81% or more.
Willingness to Accept

Finally, the customers were presented with the hypothetical situation that the public authorities stopped funding the TIB but that the German government would be willing to pay current customers a monthly compensation fee ("Willingness to Accept").

- 2.6% of respondents would not be willing to accept financial compensation. The other respondents would demand 427 euros per month on average if the TIB were to close. The payments that they would demand ranged from 174 euros for the private sector, to 367 euros for non-academic research and education, to 559 euros for academic research and teaching, and to 828 euros for other public institutions.

Also in this survey, the levels of financial compensation that would be demanded exceed the current average expenditure and the respondents' willingness to pay more than they currently pay. The levels of financial compensation that would be demanded are actually almost four times higher than current expenditure and three and a half times higher than the average willingness to pay more. Other studies come to similar conclusions.

Method for calculating the TIB's added value

The "individual value", which is the maximum sum of money that a respondent would be willing to pay to use the TIB's services, is calculated from the answers of the previous five questions regarding the “Investment in Access”, the “Costs of Alternatives”, the “Price Elasticity of Demand”, the “Willingness to Pay (WTP)” and the “Willingness to Accept” (WTA). In an additional step, individual values and public subsidies are compared. A factor is calculated which is used to ascertain the TIB's economic value in four calculation steps. These are shown below:

Calculation step 1: Direct calculation

In a first step, the answers to the questions which ascertain specific sums of money ("Investment in Access", “Costs of Alternatives”, “Willingness to Pay” and “Willingness to Accept”) are directly calculated by allocating an individual separate euro value to the results of the four questions for each respondent. In addition, the answers on “Investment in Use” are used to weight the answers from the "power users” differently to those from the occasional users.

Calculation step 2: Verification through regression models

Regression models are used to check whether the results from calculation step 1 reach the same result or whether it produces differences in individuals' willingness to pay. If necessary, the results are corrected.

The individual value from calculation step 1 is verified for each respondent with the aid of regression analyses. This ensures that plausible results are obtained.
The results for “Price Elasticity of Demand”, the extent of the level of the impact if the TIB were to close (“Costs of Alternatives”) and the follow-up questions on “Willingness to Pay” and how much are also used. This results in a corrected individual value in euros for each respondent.

The first approximate value from calculation step 1 and the individual value corrected by using the regression analyses from calculation step 2 are compared with each other. As shown in the survey, willingness to pay increases as the topic is dealt with further. 237 respondents increased their willingness to pay after the first follow-up question and 137 after the second follow-up question. However, the increases are marginal. By including these corrections from the respondents we now have a more realistic individual value for each respondent.

**Calculation step 3: Cost-benefit factor, value assessment for each respondent**

The ratio of the corrected individual values to the TIB’s per-capita budget results in an index factor per respondent. These values are then aggregated into one overall index factor.

**Calculation step 4: Ascertaining the economic value**

The public subsidies are multiplied by the overall index factor. This results in the economic value of the German National Library of Science and Technology in euros.

As an institution funded by the federal government and the federal states, the TIB receives around 23 million euros per annum. The results of the study break down as follows:

- For every euro of public money invested in the TIB, the library generates 3.8 euros in added value.
- The TIB customers confirm that the TIB is worth 3.8 times more value to them than the costs that it generates.
- The TIB converts 23 million euros of annual support into 87 million euros for the German information economy and knowledge society.
- If public funding for the German National Library of Science and Technology were to stop, Germany's scientific activity would accrue losses of at least 64 million euros.

### 6. Results Part 3: Support of New Business Areas

Alongside the measuring of the cost-benefit factor, it was important for the TIB to ask its customers about future strategic areas of work. The result can be construed as acknowledgement and support for the TIB’s path:

- The customers have confirmed that the functions of the TIB should, in future, concentrate specifically on the expansion of new services, for example, research data and multimedia products, such as audiovisual media. The TIB should support research with innovative services and integrated
processes. To this end, a digital infrastructure should be built up and expanded.

- It should also not be forgotten that the traditional library services are still a major asset for the TIB: Completeness of its collection, indexing, retrieval and archiving remain at the top of the agenda. The aim of the TIB should still be to network its customers quickly and in a targeted manner with the information that they require. To this end, both print and digital media need to be archived.

- National and international collaborations will also strengthen the TIB's extensive range in the future and increase the acceptance of the library amongst its customers.

- The customers expect the quick and reliable provision of full text. A current and comprehensive collection is important to them. Furthermore, it is also good to appreciate the exclusivity of the collection. The customers appreciate the high quality service and advice given by its employees.

7. Helpful Tool – Between Strategy and Marketing

How have we used the results for our purposes? To begin with, all the results and responses collected during the internal public relations work were published and posted onto the library's internal intranet. Email information, internal information events and reports for committees, departments and teams about the methods and significance of the results were circulated and this always in combination with the director's particular thanks to all his colleagues; after all, without the staff, such a result could, of course, never have been achieved. An interesting psychological effect set in, too; staff now had, alongside the usual figures about the inventory, customers, etc, an additional way of quantifying their own work contribution in the context of the institution's overall societal development. This recognition from outside is a good internal motivator for the meaningfulness of one’s own work.

As part of the external public relations work, different paths were taken and strategically differentiated target groups approached. The results were presented in a brochure and a more detailed description of the method was added for interested parties (in both German and English) with a motto from the former British Prime Minister Gordon Brown: “The public have a right to know that they are getting value for money and therefore there are tough choices and hard decisions that have to be made. The something-for-nothing days are over in our public services and there can be no blank cheques”. The results were presented at a press conference where the Lower Saxony Minister for Science and Culture said: “The economic benefits of this library are impressive. We now have evidence of this. The TNS Infratest survey results prove that the TIB is an effective generator of knowledge and an efficient information service provider. With its priceless collections, it is an important force for research and science which enriches our scientific society”.

A wonderful statement which was circulated with the results of the study via websites, newsletters, social media and press channels, distributed at exhibitions
and conferences and described in specialised articles and presentations (and will continue to be); indeed all the available marketing tools have been used.

There were different types of feedback such as from customers working in a corporate library who want to use the results themselves, not just for internal motivation, but also to counter a feared internal closure by conducting their own survey. In various online fora, there were lively and controversial discussions about the method, discussions which ranged right through from congratulations for the courage shown in exposing a library to this hitherto rather unconventional method in order to obtain a cost-benefit value, via criticism of the basis of the data, to an outright rejection of wanting to assess an institution which is regarded as a custodian of cultural heritage in terms of euros and cents.

From a strategic point of view, the added value result has been gainfully used; its introduction to the TIB's advisory and supervisory committees, which includes representatives from the state and federal government, i.e. the funding agencies, as well as to the collaboration partners and major customers from science, research and industry, has confirmed to the library that this method is a very good concept which has provided a pleasing, strategically significant outcome decisive for the argument to continue the TIB's funding. Other important political decision-makers and disseminators were also kept informed about the well-invested funds.

Another important strategic issue is the possibility of a benchmark with other comparable institutions. We are familiar with the comparison values of the British Library (4.4) and the ETH Zurich (not yet published), but in the case of the British Library, it must be taken into account that it also has museum and cultural functions which means that it caters to a wider audience and is thus able to generate a higher value. The more institutions at an international level which go through the Contingent Valuation Method, the easier it is not just to make comparisons, but for the individual institutions to work better on their own respective weaknesses whilst maintaining or expanding their strengths.

8. Conclusions
This added value indicator alone can certainly not give a reliable picture of an institution, so the TIB complemented this with, for example, regular customer surveys or in-depth interviews with those disseminators and decision-makers who are of importance to the TIB. These interviews were conducted at the end of the added value study. Here, too, the TIB's strategies have been confirmed, such as the increased efforts to enter into international collaborations and also the indexing of non-textual materials – we published this study, too. Quite new are the results of a customer satisfaction survey which we also conducted with TNS Infratest. By using the so-called TRIM Method, it was possible to obtain a differentiated picture of the services offered and the customers' evaluation thereof. From this customer satisfaction index, it was then possible to ascertain
an indicator for our strategic Balanced Score Card. However, this is a subject for another presentation...

To do market research, to take a closer look at your customers, and to look especially for the cost-benefit factor of your library really are tools between management and marketing. Seen strategically, the factor is one indicator which can be significant and a trump card in investment negotiations as it documents the importance of an institution for the national science location.

In the case of the TIB, a repeat of this assessment is certainly conceivable and would make sense due to the possible comparability over the years – a reasonable time, therefore, would be before the TIB’s next evaluation in 2018.

References


EFFECTIVE COMMUNICATION SKILLS TO MANAGE THE LIBRARY: RELATIONS BETWEEN MANAGERS AND LIBRARIANS

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ABSTRACT: As a non-profit service enterprise, the management of libraries and other institutions as well as brought about by the cooperation of communication between managers and employees is of great importance. Based on user satisfaction librarians or librarians, managers administer their communication managers in this process it plays an essential role in the success of the library. Indeed, feedback from users, librarians and library managers and employees working in the library's performance as an indicator of corporate success is very concerned.

Key words: Libraries, effective communication, library management, librarians, managers.

INTRODUCTION

Libraries are defined as non-profit service enterprise has a particular management process, just like for profit. The basic elements of this process, planning, organization, leadership and effective and efficient management of control systems in libraries contain important functions. Although the steps involved in this process and strict criteria have been met to support this process, even the most basic need to skip a critical element of success: "Effective Communication".

Effective communication in an organization all the elements that make up the human group (the customer / user, the employee / librarian, manager, cleaning personnel, etc.) cooperate with each other provides an open and reliable environment takes on an essential role to organizational success and the results
of this cooperation. So, doing that work together to fulfill the factors that underline the priority of interpersonal communication as the need to draw a clear and consistent.

Another important point to be underlined how important it is that the attitude of the people effective communication skills. Indeed, the most critical element of effective communication skills as the people that mind maps is shown in their perspectives.

"Library Management" is a progressive initiative, although the activity may seem like just an administrator, for the success of cooperation between librarians and administrators, compliance, and therefore effective communication is extremely important detail. Indeed, these two groups to ensure that users satisfied with library service designed to constantly are in communication and information transfer into each other at the right time required to transmit.

After that go to the library in both horizontal and vertical direction to be open channels of communication will enhance creativity. Of continuity and change in the functioning of the library as a process of communication that creates it, people in the library - the interaction between managers and librarians-will.

THE IMPORTANCE OF EFFECTIVE COMMUNICATION

Institutions established to accomplish certain goals and work toward these goals. Establish an effective communication network to carry out the purposes of the institutions must be determined. In other words, an effective contact bodies for the purposes of live bodies depends on the policy can be formed. In addition, an efficient management of a communication process based on the well (Demir, 2000)

In general, communication is defined as a message exchange between people through symbols emotions, thoughts and knowledge is transferred throughout the process. In addition, the concept of news, information, or transferred from person to person and culture in the most general sense, the spread of information between individuals and groups; source through the channel message sent to the target / recipient is defined as the delivery process (Yılmaz, 2003).

Interpersonal communication process for the formation of the establishment of a relationship is extremely important. Communication, as a group that connects people and their social activities and providing a manner consistent with a bond.
In this connection, sometimes closer to two people away from each other, sometimes it is possible to express (Demir, 2000).

**BASIC ELEMENTS OF INTERPERSONAL COMMUNICATION**

Interpersonal communication the road and the process used of person's feelings and thoughts of description, specifying or writing, both personal and corporate objectives in order to achieve the objectives (Bayraktar, 2006:6). In this process, where the person's own understanding of human communication, road show, wants to help or just listen.

Communication process of interpersonal communication in environments where there are some elements that affect positively or negatively. Indeed, communication is a complex process and there are many factors that can prevent or provide effective communication. These factors, the main ones are as follows:

**a- Communication Language Between Sender the Message– Receiving the Message**

The language used in the process of communication is extremely important. The sender to perceptions, attitudes, expectations, intentions or affects the way the message is sent. Likewise, these factors also are effective for the person receiving the message. Therefore, it was pronounced a sentence which is extremely reasonable in content style, or harsh tone of voice is high, body language, etc. used by the person installing the following sentence. Wake up as a negative influence on the opposite side of the factors and barriers the effective communication.

**b- Communication Channels**

Communication channels used in the communication process, i.e., where the means of the communication is extremely important. For example, the library's communications manager, one of the parties talking face to face with a librarian to look the other way, still one of the parties in the conversation of the telephone ringing and asking for permission to talk to the opposite side of such factors as the start of factors appears to be blocking the way of communication.

In addition, commonly used in establishments in a form of communication, especially in the written communication. Usually this method is used to inform employees of the institution are very important in the selected language. Does not target anyone, not offended, written language must be clear and understandable.

**c-Feedback / reverse transmission**

Interpret and process the message recipient to respond to feedback / reverse transmission is called. This process of making the most effective, appropriate
responses, particularly dependent on the recipient's show. Provide feedback, such as better understanding between people conveys the result quickly, is a mechanism that allows saving time. It is usually more rapid feedback to face to face communications (Bayraktar, 2006:8).

For example, the library director and librarian the librarian wants to do something to make it an excuse for not doing so if the request does not exist or an appropriate communication language at that time to say it is extremely important for effective communication. At that moment, not reaction / response / feedback, will block the communication channel between the librarian and library manager.

d- Environmental Factors

Effective communication is a communication process takes place for putting the environment, the physical conditions in this environment, and some external environmental factors such as noise may prevent the existence of the communication must not be ignored.

EFFECTIVE COMMUNICATION SKILLS TO MANAGE THE LIBRARY

Communications - a library at the beginning of the relationship issues that need to be considered in the processing of the communication process and the items of income involved in this process. Condition of the communication process as a whole, being the institution of the library. Communication - the most powerful corporate relationship between the libraries is the point.

Communication in the definition of the concept of "message passing" is the main function of the institution of the library. So communication between the library, there is a relationship based on the definition of communication (Yılmaz, 2003:26).

One of the conditions to succeed in corporate communications with the library management process, all employees means that the exchange of information between the horizontal and vertical directions. Corporate communications, processes, inclusion of librarians, librarians working in the library as an institution to adopt the inclusion of the processes will help. Indeed, as a service business libraries and librarians in both horizontal and vertical communication channels are open to creativity, especially no doubt be developed.
Factors of the Blocs of Effective Communication Language

Communication in the process of the library and managers, which will be discussed in more detail below with some skill, is required. However, often unable to use these skills only. As mentioned earlier, because the process of communication is a complex process, and this effect appears / invisible has many elements.

Sometimes librarians and sometimes managers they are brought in this process of culture, where the media, they carry responsibilities, roles, factors such as message sending and receiving messages can lead to misunderstandings. This, in fact most people blocking the way for communication between these elements can be sorted (Bayraktar, 2006: 14):

- I know
- The mind reader
- Personalization
- Making Generalizations
- To act prejudiced
- Emotional act
These actions often dislike making the communication process that creates one-sided errors. In terms of interpersonal differences in the detection of these errors in the background, to understand the difficulties, lack of trust is seen that the effect of many factors, such as (Bayraktar, 2006: 15).

Contact in the Process of Effective Communication

Organization charts of libraries contains data should be read very well in terms of showing the layout of communications. Superior-subordinate-relationship between this data format is also important because it shows the direction of information flow as determined in the library.

Belongs to the senior management decision-making authority of traditional institutions. However, in the opinion of today's employees are given decision-making institutions. Communication for the sharing of information by all employees, up, down and sideways must be accurate. This situation creates the flexibility to communicate. In the literature, the flexibility of institutions, communication is very important for an effective quality management are discussed (Erkut, 2001).

The traditional corporate structure, management style, while a top-down directives and orders, changing management approach or bottom-up support after the administration of the pyramid has been given a completely opposite turn. Reverse in the administrative pyramid refers to a structure that employees attending the management and top management supporting the employees the realization of corporate activities and the production of quality goods and services provided (Gürüz and Gürel, 2006: 101).

Change in management style, understanding of the traditional management, change management techniques seem to be described as transitional. The traditional management approach the top management, in accordance with the instructions and steps in the corporate hierarchy to give orders while the realization of corporate activities, the new corporate hierarchy, the pyramid structure of management approach than in the past reversed and leaner, more functional, more user-oriented and more communicative functioning can be seen that the dominant institution.

The information passed from the source, or when the communication process as a mutual, with other channels and leads to some difficulties in cases of unauthorized persons to learn. Indeed, an effective communication process consists of these (Akat, 2000: 81);
• Communication source or the transmitter
• Channel or vehicle for communication
• The person who addressed for communication.

As a result, the library managers and librarians to establish and implement an effective communication system is of great importance to hoard. In addition, effective information transfer in effective communication process is also beneficial in terms of revealing the changes and innovations in the library.

**RELATIONS WITH MANAGERS AND LIBRARIANS**

Communication, knowledge creation, transfer and explain the process is taken as effective interpersonal communication need to think to mention any of this information has been moved from one individual to another.

The managers and the management group of libraries that perform management provide the necessary flow of information supporting the librarians or the library to provide quality of service and, more importantly, to ensure user satisfaction should be in constant communication and collaboration.

Librarians but rather to inform senior management of the target display, give orders, to warn, to get information into contact with them. Librarians deliver the demands of managers, to express grievances and expectations, and again enter into contact to get information from them. But accurate and reliable communication channels within the library or institution, flexible communication structure does not have a democratic, not at the desired level and one where the exchange of information will remain blocked (Bayraktar, 2006:3).

*Attitude of Managers*
Today, the real people the important decisions, and an institution designated by the managers involved in a business organization. Changes in internal and external environment, the mission of an organization of administrators who have administrative positions has created a number of changes. Administrators can now decide for themselves whichis not the role or self-employed person.

An administrator on the concept of the last few years, as well as in the definition of the term variations occurred. Management work in parallel with changes in the structure of the "administrator" instead of the term, these changes and developments that better express the concept of thought and a candidate to replace the term appears and executive CEO, information professionals, information manager, leader, coach, facilitator, preservative have been used concepts such as (Koçel: 1998:19). Pass rather than the concept of the new terms and concepts discussed in this ruling. Today, however, intended for at least changing the administrator of the concept is that the content in terms of these new concepts.

This new management approach, the importance of senior management or the requirements of his job does not mean decreased, but rather knowledge of employees who show them the way to ensure efficient managers, to motivate them between the new and challenging tasks, such as the upper level was added to a task means (Drucker, 1998: 260).

Managerial skills of a manager to put forward fully, effectively functioning in other words, make a plan, organization and coordination activities have been made available and to be able to work correctly, you must have communication skills (Bayraktar, 2006: 4). Of continuity and change in the structure of the organization that created the communication process, can perform through corporate interaction. At this point, this will be given priority in the role of director of that institution.

Indeed, according to TS EN ISO 9001 which was prepared by the TSE (Turkish Standard Institute), senior management, organization and communication is the creation of appropriate communication processes (taking into account the effectiveness of quality management systems) should provide to happen. In other words, any organization that the TSE is one of the criteria required to obtain ISO 9001 certification.

Thus, in a library administrator before adding that the proactive approach is required to perform the work, other administrators, librarians should take contact with colleagues or externally. This can sometimes respond to the papers,
preparing reports and making possible the transfer of such information may be sometimes, and meetings.

8C is a formula for providing the library manager's librarians, also known as an effective communication plays an important role following criteria (Bayraktar, 2006:5):

• Credibility: librarians need to hear the trust managers. In this sense, the administrator must have a respectable personality.
• Content: Library manager is clearly correct and that they wanted to say that those requirements.
• Context: provide the right information to librarians and library managers are expected to make it a well-crafted content.
• Continuity: The library manager and this communication should take their feedback constantly must make his arguments.
• Consistency: Library manager told me that they should be consistent, and promised a return.
• Channels: Library manager is required to librarians prefer to set up communication channels to communicate. At this point the level of perception of librarians, many factors such as activated cultures.
• Capacity of the audience: librarians who deal with post detection levels, the correct understanding of the factors seem to play a role in sub-cultures.
• Clarity: The Librarians message that will be given a clear, understandable, accurate, and give simple words.

Expectations from Librarians

Traditionally, librarians were responsible to provide, organization, and protection in a standard library of the printed word to the user, beginning in the early 1990s and quickly spread to the "service oriented" approach, such as librarians, marketing and strategic decision-making made it mandatory to have more management skills. In addition, the rapid advances in Internet and digital information librarians, database management, web page design and digitization efforts, and all the equipment or technical information which has necessitated that the judge, in short, the exchange of librarians who had captured the "digital librarian" trying and started (Barton, 2006:86).

There were very large changes in the roles of reference librarians, in particular, and even now, "the teacher" must indicate the beginning called as. Indeed, the traditional role of the reference librarian, while the reference desk to wait for the user, who is now helping the user find what I learn how to began to be perceived as a teacher or trainer. In addition, reference librarians who assist in the
selection of sources of information, unlike the old have had a very active role (Li, Leung and Tam, 2007:538).

As input and intensive use of computers in the field of information services, communication of information to increase speed and accuracy considerations in gaining a new dimension to the profession of librarianship. Classical sources of information, new ones added, "multi-media" which is described as increasing the density of the multimedia type information. In this context, the role of the librarian has changed to the modern information service, has become more difficult task.

The role of librarians in the changing and difficult task at this point is extremely important to have effective communication skills. Indeed, that communicates directly with the users to the library's main customer base are librarians. So in a sense, librarians, libraries and acts as a bridge between users and users of the library or institutional administrators will face. For this reason, inspires users impression of librarians, are also factors in the perception around the outside of the library as an institution.

Follet in England in 1993, a report released that librarians should be equipped with devices which are described on the face of the needs and expectations (Follet Report, 2008):

- Teaching and learning ability
- New technology and information systems
- User-oriented approach
- Management skills.

Heery and Morgan report, three years after Follet, in the face of rapidly evolving technology, the characteristics to be re-determined the presence of a librarian. Accordingly, in 1996, librarians need to have the features are as follows (Heery and Morgan, 1996: 131):

- Teaching and learning ability
- Information technology skills are associated with
- Collaboration with academic staff
- Management skills.

Heery and Morgan's work three years later, in 1999, two Polish librarian Feret and Marcinek, a futuristic approach in 2005, "The future of academic libraries and academic librarian," a work made (Feret and Marcinek, 2007). Although small differences in work before him, notable in this study are that the librarians
expanded the scope of information technology hardware. Accordingly, the following four categories of competencies required of librarians have been collected:

1 - Communication and Study Skills
- In language proficiency (at least to be fluent in English)
- Team work to be compatible with
- Teaching and learning skills
- User-friendly
- Public relations
- Sense of humor

2 - Information Technology Skills
- Basic Level: PC, Windows and Internet Information
- Advanced: HTML, web page design, system design,

3 - Administrative Skills
- Project management skills
- Information technology management
- Time management
- Business to approach
- Analytical skills
- Global approach / Vision
- Leadership
- Knowledge of international standards
- The ability to quickly grasp

4 - Responsibility
- Intellectual curiosity
- Professional Responsibility
- Flexibility
- Multi-disciplinary and multi-faceted skills
- Entrepreneurial approach

After this study, in England in 2004 the academic library in 2010 by a group of writers and librarians need to have the features depicted and is discussed under the following headings (SCONUL, 2007):

1 - Service personalization: The design of services to the needs of library users.
2 - Cooperation: Cooperation approaches; both physically and electronically share information for academic staff includes librarians.
3 - Flexible use of the media: The physical space will be more flexible support of information technologies and social learning activities and will expand even more.
4 - Management and Skills: Librarians in finance, marketing, and information literacy competencies, such as must have.

CONCLUSION
An effective communication process when there is carried out, depending on many different factors. In this study, emphasis on the interpersonal communication process, librarians and library managers considering the size of both librarians and managers need to have basic communication skills emerged. This skill is the success of the library as an institution and therefore the audience from the library service also plays an important role in ensuring user satisfaction.

Libraries, which was established to ensure that users need to learn a non-profit service business. In others, such as effective communication is essential in this business. Indeed, the successful management of the library and librarians for its administrators to create, user satisfaction must be in cooperation and communication.

Identification with the library work of librarians, to embrace and adapt to changes in the goals is extremely important to know and act accordingly. Therefore, the objectives of the library, not just at the same time librarians should be aware of innovations. The opposite situation, communication within the library are not committed enough or correctly.

As a result, both librarians and library administrators for corporate success in understanding, listening, speaking, must have the ability to ask questions and show empathy. Ability to analyze problems, especially in the identification and resolution process to come forward. Reduced hierarchical steps in the library, librarians need to bi-directional communication system can transmit up to problems and requests can easily be established.

REFERENCES


GÜRÜZ, Demet ve Emet Gürel, Yönetim ve Organizasyon, Ankara, Nobel, 2006, s. 101


Improving the information literacy at the Czech Technical University in Prague: support of study and research

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²Institute of Information Studies and Librarianship, Faculty of Arts, Charles University in Prague

Abstract: The paper presents the activities of the Central Library of the Czech Technical University in Prague (CTU), which was created by a merger of independent faculty libraries in 2009. The library’s key role lies in supporting the educational, scientific and research activities of the university. Its aim is to understand the information needs of both students and researchers, and to meet their expectations in terms of services and resources offered. Activities of the Central Library (CL) are developed in close cooperation with both the university management and individual teachers/researchers, and always with a respect to students’ needs. Particular examples used in CL practice are discussed in the paper.

Keywords: academic library, information education, information literacy, R&D support, study support

Introduction
Czech Technical University in Prague (CTU) is the biggest and oldest technical university in the Czech Republic. Currently there are about 23,000 students, about 3,000 academics and more than 200 members of research staff (CTU, 2011). The libraries of the CTU were merged into one central university library in 2009. Until then there was a single library for each faculty which ran independently on the others. The transformation of the separate libraries into one body involved establishing a new independent part within the university structure, merging of collections and staff, and changes in financing. The librarians perceived this changing environment as a chance for change: particularly for restructuring the system of services and creating a new information background for the university.

Problem description
The organization of libraries at CTU has gone through many changes in the university history. The system of CTU libraries was yet distributed to faculties while entering the 21st century. The only department that had some coordinating role between the libraries was a part of Computing and Information Centre
(CIC) of CTU established in the late 80’s with the aim to create a computer-based library management system. However, this department had no ambitions to become a base for managing the university libraries in other fields than the library system. This experience showed that a voluntary cooperation can work efficiently for a long time, but it was obvious that the different conditions in library management, budgeting, staff management, services providing, and projects acquiring were barriers for effective library activities. The main shortcoming found was the wasting of time by having the same work done by staff in every single faculty library.

New conditions
In 2009, all independent CTU faculty libraries were merged into a new CL. The challenge was to restructure the existing system and create a new one while keeping all required functions and adding new high-quality services. To establish a good-working compact body, we had to first provide an analysis of the current system and prepare a proposal of the libraries transformation—to describe the current state, to analyse the particular elements and their relations, and to decide what to change, what to discontinue, what to improve, and what to introduce. As a part of the analysis, an internal document ‘Strategy for the information literacy development of the CTU students for 2008–2012’ was released by the librarians in 2008 (Tichá, 2008).

We had to consider especially: the strategic plan of the CTU, trends in academic libraries development, strategic documents for information literacy (IL) development in higher education (Pejova, 2006, ALCU, 2008), fast development of ICT, specific needs and requirements of the faculty and students at a technical university, expectations from the librarians, demands on providing well maintained and organized information (preferably with added value).

These were our strengths:
• the librarians themselves had demanded the establishment of CL,
• awareness of the university's long-term intentions,
• proactive approach to participation in academic life,
• previous close cooperation with the faculty,
• voluntary long-term collaboration of faculty libraries coordinated by CIC had been working successfully for many years,
• experience of several faculty libraries in providing progressive services (evaluation of R&D results, knowledge of intellectual property issues, IL issues embedded into curricula, librarians’ skills in teaching and training).

Obviously, there were also some threats, or risks, we had to deal with:
• some previously well-established processes and relationships were broken, so confusion of some faculty members could have been expected,
• contacts and the credit built-up by faculty libraries has been seen as of ‘local importance’, not sufficient to broaden to the whole university,
• some users were conservative and not willing to change their habits (to accept the conditions in CL).

Goals of the new library
• to build-up library’s reputation within the university,
• to convince the academic staff and management of a positive role of CL,
• to persuade faculty and university management to let the librarians participate in education, i.e. to invite the librarians into classes,
• to convince researchers and university management that the library staff is capable of contributing to research and to the R&D results evaluation,
• to maintain existing services at a high level, and to further improve them,
• to adapt client-centred services to new conditions,
• to embed IL into curricula,
• to train the teachers to use information resources in classes and to require its use for assignments and final papers.

The goals and intentions of CL have been formulated in order to meet the priorities and recommendations of strategic plans of the university (and of The Ministry of Education, Youth and Sports), such as: responsibility for the employability of graduates, requirement to support another abilities in addition to expert knowledge and skills, development of students’ general competencies, support of activities concerned with ensuring the protection of intellectual property at higher education institutions, etc.

**Study support**

The intention to form the study support department resulted from the 15-year experience with organizing IL courses in the former library of Faculty of Mechanical Engineering. From 2000, an Information Education and Information Literacy Working Group of the Association of Libraries of Czech universities (ALCU), has been supporting the cooperation in the area of IL. The working group was chaired by the CL librarian L. Tichá for 11 years. CL considered IL issues to be an important part of the curriculum, and we planned to widen the study support service to all faculties. The final objective of the department was to embed IL into curricula in cooperation with the teachers.

The study support department’s scope covers providing support for students, e.g. the library web site maintaining, marketing of library resources, services and trainings, IL courses, lectures for the academia focused on ‘hot topics’ in higher education (copyright act, plagiarism, intellectual property protection with emphasis on patents and its importance for R&D evaluation), consultancy for students and academic staff.

The department has used a variety of ways to get a feedback from academia: surveys investigating citation manners and practice, pre-tests and evaluation questionnaires, observations of students’ information behaviour, frequently asked questions. CL follows the strategic plans of the university and changes in curricula, and monitors trends in IL and academic libraries. This helps to identify the new ways of work, to adapt library services to students’ and faculty needs, and to offer a range of valuable activities to academia proactively.

IL support has been planned with respect to following CL and university goals:

• to shape the students’ skills required for study,
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- to contribute to students’ skills important for professional life (ability to solve problems, to find and evaluate information, to create new knowledge and communicate it, to use the new knowledge for technical solutions), and to introduce them to the professional community in practice or science,
- to support and develop the student’s skills in writing, citing and using information in ethical manner,
- to meet the principles defined by the Strategy (Tichá, 2008).

The following table and graph show the number of hours spent by the librarians from department of study support by diverse types of training, and the number of participants attending the events in last two years.

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<th>2010 participants</th>
<th>2011 hours</th>
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<tr>
<td>total</td>
<td>235</td>
<td>1,126</td>
<td>283</td>
<td>1,496</td>
</tr>
</tbody>
</table>

Table 1: Comparison of the hours spent by training and the no. of participants.

Graph 1: Participants attending diverse types of training organized by CL
Communication and cooperation within the university

What steps have been taken and how have we tried to achieve our goals? Following examples show our approach to find the right course for promoting the planned activities.

Example one: 10-week course for postgraduate students ‘Information for R&D’

The course was established at the Faculty of Mechanical Engineering on the vice-dean’s demand. To promote the course at other faculties, a project was presented to the faculty managements and people responsible for doctoral studies at the university (i.e. the vice-rector, vice-deans, and the heads of the faculty departments for R&D).

The project contained:
- formal data (the course title, intention, target group, goals),
- organizational details (semester, time range, lecture/computer room requirements, form of instruction, financing, lecturers),
- subject coverage (including electronic resources for R&D, guidelines for writing an academic text and proper citing),
- educational principals (learning systems, teaching methods, teaching and learning materials, assignment and assessment, course certificate),
- course evaluation (questionnaire) as a feedback for course improvement.

The course was accepted as a recommended course for postgraduate students, and liaison persons were appointed at every faculty. Further cooperation with each faculty included a help with the provision of the course schedule, computer labs/lecture rooms, technical tools, accessibility to the faculty network for lecturers, etc. The faculty contact persons have always been provided with the conclusions of the course impact which cover results of the students’ works (accomplished tasks) and results of the students’ questionnaire after the course. The course has been running at 6 faculties from 2010 (14 courses altogether in 2010-2011). The course syllabus contains advanced searching in electronic databases (including technical standards and patents), resources for R&D, evaluation methods for R&D results, ethical academic writing, citation and reference managers, and supplemental topics on demands (presentation, active conference participation, etc.). The course topics are subject to change—it has been altered every year according to needs detected from feedback, availability of information resources and tools, and also on.

Example two: promotion of the intellectual property protection

One of the tasks the new CL focused on was copyright and plagiarism issues. There were many discussions about Copyright Act and the Higher Education Act, and as we understood, there was rather low awareness among the academic community about these issues. Cases of plagiarism detected in the academic sphere in the Czech Republic and abroad raised new questions. Therefore, the library organized several lectures ‘Copyright in university practice’ with lawyers as lecturers, and two seminars ‘What do you want to know about
Example three: support in evaluation of R&D results

The former library of the Faculty of Electrical Engineering had a lot of experience in the support of R&D before CL was established. CL also finds these activities important and continues assisting the process of research evaluation, both at the level of individual researchers and the level of the whole university. The support of individual researchers and CTU authors focuses on increasing the knowledge of the Czech national system of R&D evaluation, and helps with the specific steps researchers have to take while submitting their research results to the internal information system and the national R&D database. Every year, The Research, Development and Innovation Council of the Government of the Czech Republic specifies the criteria for research results and assigns ‘points’ to scientific contributions in the national R&D system which consequently bring money to the university. CL librarians continuously follow the changes in the system, study new guidelines released by the Council, and work with the R&D information system. A part of CL website dedicated to the Czech R&D evaluation system informs the researchers and PhD students about university internal guidelines and the national system. The area of R&D evaluation is one of the topics of the course mentioned in example 1.

As the national R&D evaluation system is based on assigning different amount of points to results published in prestigious journals or registered by several citation indices, it is very important for both the authors and the university that the result is identified and matched with CTU affiliation. To ensure this, guidelines for authors defining the obligatory form of quoting CTU affiliation in published articles were released by the university management in 2008. Also, the library staff communicated with producers of Web of Science (WoS) and SCOPUS to ensure that CTU would have a unified affiliation name in the databases (together with only one unique identifier in SCOPUS) and that all non-preferred forms of its name would be matched with this preferred form. The unification of affiliation name in WoS was completed during 2008 and the integration of affiliation IDs in Scopus was finalized during 2010. This effort was reflected in the increased number of publications matched to CTU and used for the international evaluation of universities (QS university ranking). Contribution of the library to the improvement of CTU ranking is highly appreciated by the university management.
Example four: Open Access promotion

From 2007 CL engages in the support of open access (OA). The first step was creating of the institutional repository for CTU’s theses and dissertations by the library and CIC. The pilot project of the repository started in 2007. The librarians and IT specialists have been attending seminars of the Czech users of DSpace system from 2008. As a result of the developing co-operation of the Czech academic libraries on this field, an OA initiative under the auspices of ALCU was established in 2010. In the same year, the libraries united in the Initiative joined the international OA Week for the first time. CL CTU was between the first members of this informal community. On its 10th annual conference, the Association decided to claim its support of OA by signing the Berlin Declaration.

To promote the ideas of OA between faculty and students CL dedicated a section of its website to the topic and it was also included in the above mentioned PhD course. OA resources relevant to the CTU disciplines were selected, basic descriptions and links were added, and the sources were divided according to subjects. These subject-specific lists tailored to our users’ needs were appreciated for added value.

In 2011 the institutional repository (Digital Library of CTU) has started its full operation. The workflow between university information system and the repository has been developed and tested. Nowadays, the metadata of final bachelor, masters and dissertation theses are available, and the repository is ready for submission of full texts as well. The approval of inclusion of full texts depends on the policy of the university which is being developed now. From the beginning of 2012, publication results of chosen highly-cited CTU authors (available for self-archiving by the publisher) are deposited to the repository by the library staff.

The new institutional development plan adopted by the university management in the beginning of this year declares the aim of the university to promote free access to the results of R&D, transparency of science, communication of scientific results and the openness of university on both national and international level. In accordance with this objective CL was assigned the task of building and managing the institutional repository. In this situation, it was obvious that fortune favours the well-prepared and the library’s proactive approach paid off: as the technical solution was already chosen and prepared for use by the library and CIC, the management could respond to the challenge of university openness immediately. In the same time, they recognized the library as most appropriate to coordinate the task.

Conclusions

From its establishment in 2009, CL has been working on fulfilling its main mission to support the educational, scientific and research activities of the university. After the merger of former faculty libraries CL continues with the enhancement of IL of all users, esp. by providing various forms of training and education and by supporting the research process. We are aware that it is crucial to communicate with the university management, and to cooperate closely with
the teachers. Considering that the CL’s department of study and R&D support has only six employees (4.4 FTE), it has done a good deal of work. Naturally, there is a lot of work ahead of us. The ‘Strategy for IL development’ published four years ago was an important guideline and most of its 15 recommendations were applied. But it is the right time to update the document and adapt it to current situation. The important tasks for the future are: managing and further development of the repository, supporting IL, and fostering further cooperation between academic libraries in the field of OA. For further development of CL it is fundamental to reflect every change in the university environment, to consider the users’ comments and suggestions, and to be positive even in unfavourable conditions.

References

Notes:
3 Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities http://oa.mpq.de/berlin-prozess/berliner-erklarung/
4 http://knihovna.cvut.cz/veda/open-access/
5 https://dspace.cvut.cz/
The Feminine Reading Room: a separate space for women in a Portuguese public library

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Abstract: A quasi-fictional narrative, is constructed from the public event of the inauguration of the Feminine Reading Room in Porto Municipal Public Library, in 1945, based upon historical and sociological research. Biographical and historical data are crossed with those from literature, photography, and interviews to rebuild a holistic context of events within the frame of a qualitative approach, aiming to understand the significance of the use of such semi-public spaces by women. The invisibilisation of the presence of women is interpreted on the basis of women's status, shaped, in its turn, by local and historical situations. This case illustrates how separate, women-only spaces contributed to processes of women's appropriation of public space.

Keywords: public libraries; public space; women; gendered spaces; Portugal

1. Introduction
It all started when we heard that Porto's Municipal Public Library once had a special reading room for women only. A magazine article reporting on its inauguration was eventually located. The singularity and significance of this, hardly known, fact lead us to research it further. The aim was not to solely reconstruct the existence of such a specialised room but to understand its social significance in the context of public space use by women in those times and for that urban location. A qualitative approach was designed and diverse sources were used: the library's administrative archives and the municipality's historical archives, the Portuguese Centre of Photography, historical and sociological theory. Along with biographical documentation search in Portugal and Brazil on Virginia de Castro Almeida, semi-structured interviews were conducted with a former user of the Room and three of Tília Dulce's relatives. A narrative, only partly fictionalised, was constructed of what a visit to the Feminine Reading Room might have been. As a portrait of one single moment. Additional context data are provided to set the social, historical landscape of such a portrait.

2. A historical-fictional narrative
The mayor, several councillors, the library's director, some intellectuality's representatives and several women gather to inaugurate the Feminine Reading Room in Porto's Municipal Public Library, the 24th November 1945
The director proclaims that if some “limpid, angelical figures”, might be seen reading behind those doors in the future, even if only to read The imitation of Christ, the mayor may be assured to have accomplished the best compensation for his administrative life.

Virginia de Castro e Almeida (1874-1945) has her name inscribed in a plaque at the entrance of the new Room. She is then evoked as a renowned novelist and a children’s books writer, not a revolutionary but a woman “leaning towards a calm beauty”; not an advocate of the current feminism, but of a kind which is that of “an educated, balanced woman's voice, pure, who aspires to a place by her male companion, to share his grievances, his works, his joys” (idem: 427).

These cautionary words contradict Virgínia's own's. She had been a feminist, only regretting to have mistaken feminism for a “grotesque and vague, maybe dangerous, utopia.” But then “a great master, Life', harsh and prodigious [...] whose teachings never fail” taught her better (Almeida, 1913:14). Thus her passionate exhortation published in 1913, shortly after the republican revolution of 1910: “Women of my country!... Cinderellas with an empty brain, who wait, sitting by the fire-place and with morbid tremors, for the hypothetical appearance of prince charming, grave maid-servants, who spend their lives with the pantry keys and a needle in hand, without the slightest idea of domestic economy or hygiene, confusing honesty with the neglect of beauty; beasts of burden or reproduction, surrounded by children who they know not how to raise or educate; luxury dolls, dressed up like the ladies in Paris and all their intelligence absorbed in decoding fashions, incapable of any other interest or any other comprehension; [...] passive instruments in the skilful hands of Jesuitism which moulds them like wax; fervent servants of snobbery and gossipping; superficial imitators of models they barely know... Poor women of my country!” (idem:17).

Virginia had also played a salient role in the history of filmmaking. She had been a counsellor with the Portuguese Popular University, a progressive institution (Associação..., 2001). She adhered to the regime's fascist ideology later, producing children's books glorifying nationalistic myths (Balça, 2007). This was surely the reason for such a public demonstration of appreciation from local authorities.

By that time, and in other countries, several public libraries had separate spaces, from ladies' reading rooms, or alcoves to ladies' tables. The scarce literature on this theme describes mainly USA and UK cases (van Slyck, 1996; Hoberman, 2002; Buggs, 2005). These areas were very popular among women in the United Kingdom, considering that about 36% of the 560 local government authorities

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1 see Virgínia Folque de Castro e Almeida Pimentel Sequeira e Abreu, in Fundação...
2000

2 according to França, 1983, the ABC magazine published in 1928 a list of the twelve most popular Portuguese authors, including Virginia de Castro e Almeida
who had adopted the Public Library Act by 1914, had made such provisions (Baggs, 2005). Women's reading clubs were relatively common in the USA, and some evolved later to municipal libraries with local government support (van Slyck, 2001). And we are also aware that Lisbon's Popular Library, dating from 1912, had “a general reading room for adults and children and a room reserved for ladies” (Melo, 2010: 49).

We could not find documentation on the rationale supporting the decision to open this room in the library's archives. Whether the idea was inspired by North-American practices, or by the centuries-old cultural ties linking Porto and the British Isles, is a matter we may only speculate about. The advocacy for this separatism sounds bizarre to the contemporary reader: not only were women thought of as needing to be protected from male readers, but women's presence was also esteemed to distract serious readers - a group they were thus not included in. “Of particular concern were 'library loafers', unredeemable working-class men whose loitering thwarted the noble purpose of the public library.” (van Slyck, 1996). The mere presence of women was also supposed to “morally elevate” behaviours in such public spaces, or others like hotels or restaurants, on the grounds, we may guess, of their commonsensical and essentialized “purity” (van Slyck, 2001; Merrett, 2010).

It should be noted that, in the beginning of the 1950s, a single woman was listed among more than 20 regular staff members in this library; among a similar number of contracted workers the only females, would be the cleaning employees, most likely, the rest being attendants.

We were lucky enough to locate and interview one woman who had visited the Room in her youth, and conversed with others on how they occupied their spare time in those days. Crossing data from Virginia's writings with those from collected readings, photographs, and personal statements - and female relatives' memories -, and with those from the library history, we built this narrative.

○ Portrait of a woman reader against a grey landscape

The German Army's surrender, putting an end to the World War which left the country economically exhausted, has been announced May 8th. Public demonstrations followed the allies’ victory, leading to the announcement of free elections in October, just a few a weeks before the Feminine Room's inauguration. The electoral process aimed to legitimise Salazar vis-à-vis the victorious regimes. As an electoral farce became clear, the only oppositional party withdrew from it. Afterwards, repression increased, and a librarian is - again - suspended from his duties on charges of political activities against the government, together with several other civil servants all over the country; he will be arrested in 1948, as he had been in 1939.

3 administrative files, letter ref. 139/48, referring to Narciso de Silva José de Azevedo
Adozinda lives near the library. Berta, her schoolmate, told her about this room, just for women. Adozinda had already read some articles by Virginia in the feminine supplement to the newspaper O Século her father buys. She feels excited with this new opportunity to leave home and maybe make new acquaintances. Going to the Faculty of Pharmacy occupies most of her time now. Papa persuaded her: that is such a nice graduation for a girl.

She usually goes out with relatives or other female friends: she often accompanies Mama, who enjoys having tea with her friends downtown. Every now and then Adozinda goes to cinema matinées with Berta, Thursdays attendances are especially suitable for young ladies. When she gets bored, window-shopping is always welcome. She only has to avoid some streets, some sidewalks of cafés or pubs where men are known to gather to make flirtatious remarks at passing girls. She knows that she must keep her eyes down when crossing with men in the streets, not to be mistaken for the wrong kind of girl. And that kind of girls do show up in that nearby street with a bad reputation.

During war time, food shortages were dramatic, rationing was enforced. Unemployment, wage cuts due to reduced working times were frequent. Increasing numbers of beggars and prostitutes, a rise in food thefts and assaults on bread distributors concern the police. In 1944, several hunger marches occurred in the city and its vicinities. Rents rose leading impoverished workers to build shacks. Most homes lack water supply or sewage. Epidemics are frequent and lethal (Rosas, 1990), specially tuberculosis. Several library workers were stroke by this disease and sanitary inspections are frequent among them.

Today there are some children playing in São Lázaro's park, across the street, watched over by their families' maids.

[Figure 2] São Lázaro's park, 1950. Some women may be seen sitting; behind the children in the foreground, is a maid in white apron - former O Primeiro de Janeiro newspaper's photographic archive.

It's early, in a Winter morning, fishmongers are coming up from the river pier, balancing baskets upon their heads and shouting out the virtues of their produce. Other women come to sell vegetables from the near farms of Campanhã, in wagons. Adozinda no longer meets the bread sellers and milkmaids visiting their regular costumers; that part of the city's routine is staged still at dusk, some hours before her breakfast is served to her in bed by Maria, the servant-maid.

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4 the supplement Vida Feminina (Feminine Life) was distributed with O Século (The Century) during the fifties; see Guimarães 2004
5 Lamas, 1950
6 According to official correspondence 1937-1938
7 see Lamas 1950 for this and other aspects of working women lives; for the daily life in the parish of Campanhã, see life narratives in Pombo et al. 2005
“Housewives are practically non-existent among the popular classes”, in 1950, 22.7% of total active population are women. Rich women dedicate to charity. Some young female aristocrats engage in learning “only to have some general notions of culture” (Lamas, 1950:460). Salazar, the fascist dictator, had ruled that men, if unemployed, should be preferred to women, decreasing the female workforce. Women might get two thirds of a man's pay for the same job.

Rural women live in degrading conditions, making them “fall into a rude mysticism”. “A book or a newspaper never reaches their modest houses, nor is there a library in the hamlet, however modest, where to practise the little they have learned.” Yet, “the newspaper enters their houses and through it the rich and the well-off women constitute a culture which, unfortunately, is not always the best [...]. Feuilletons, hare-brained novels and complicated adventures 'turn them wild', leading them to create a non-existing world” (Ferreira, 1935:11-18).

Maria acts a bit silly, always laughing, even when deep down she's in sorrow. She has a way of her own to deal with misfortune. Maria left her small village to escape famine at the age of fourteen.

At her own mother's request, Adozinda began teaching Maria to read. Three years in school had not enabled to read the photonovels she so appreciates. For now, Maria has to settle with the radio novels aired in the afternoon.

Adozinda enters the library and finds her way into the Feminine Reading Room, conveniently placed by the front entrance, beside the cloister garden.

The Public City Library of Porto was inaugurated in 1842. The collection consisted mainly of books expropriated from religious orders and aristocrats opposing the liberal revolution. The building, a former convent, looks austere. The town centre lies at fifteen minutes walking distance. Cinemas and theatres, fancy stores are concentrated in nearby quarters. The adjacent parish of Campanhã still has the traits of a rural community, although Porto is a leading region as far as industrialisation is concerned.

[Figure 3] The Feminine Reading Room, undated, Alvão studio, ref. ALV004609, CPF/DGARQ/MC.

Adozinda wonders which book to request and glances around. English style furniture, a round table with a Wedgwood-like Greek vase, a chandelier, ceramic busts decorating the bookshelves, wallpaper, a carpet and curtains, all

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8 this author provides a very vivid description of living conditions of working women, collected here, in the pages of Vida Feminina

9 The Feminine Reading Room was located by the entrance, to the right, according to common oral knowledge among present professionals in the library and to archives.
offer a distinguished touch to this small room. Special care has been paid to it, an assistant explains, the general reading room has no such luxuries! - as a matter of fact it is the only room equipped with a heater.

Then Berta shows up, they don’t have classes that day. Berta’s parents both work, they consider themselves neither poor nor rich. Her mother works hard, teaching two, three or even four grades in the primary-school during a single year. Berta only occasionally goes to the cinema with her friends, she sometimes even ventures to enter alone, being a girl with a “bold mentality”. She can easily catch the tramway to the library, and so she doesn't have to buy so many books for her study now.

Then, remembering she had read some books by Virginia de Castro e Almeida as a child, Adozinda asked the assistant for the title *A mulher* [The woman]. It was a small book she quickly reads, stirring her imagination by the author's accounts of women's education in Switzerland.

Most of all, she was surprised by her statement:

“In feminism, as in socialism, as in all grand beliefs and in all hopes that have ennobled the human spirit, and have taken it to the conquest of a redemptive ideal, there are the exalted, the fanatic, the non-understanding, the ones who go beyond the dream, the ones who do not measure the part that one must leave for time and who think they're able to realise, in a lifetime space, what the work of the centuries alone will one day do.”

So Virginia had been a feminist? She had no idea! And the text goes on:

“Women of my country!... Cinderellas with an empty brain...; luxury dolls, dressed up like the ‘ladies in Paris’...”.

These ideas make her a bit uncomfortable. Times have changed, anyway, that book was written some time after her mother was born.

Pires de Lima declared, before being the National Education Minister: “Yes, young ladies who are listening to me, there is only one emancipation worthy and legitimate for you: wedding.

Regressive legislative measures, altering the republican laws, allowed the husband to demand the delivery and judicial deposit of the wife, would she leave home. Women could not engage in commerce, sign contracts, administer assets, appear in court, travel abroad, publish writings nor leave the country with the

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10 similar care and type of decoration for feminine parlours is referred by van Slyck 1996; on how décor may support the gendering of space, see Hoberman, 2002 and Merrett 2010
11 based on the account of Fernanda, our interviewee
12 Pacheco, 2003
13 speaking in a conference entitled ‘Feminism and feminists', held in 1932; in Neves and Calado 2001: 17-18
husband's consent. The right to divorce had been denied, in practice. The right to vote or to be elected is granted only to single women over 21 with a personal income, to married women or heads of their families if holding secondary education diplomas or paying a certain amount of house tax (Pimentel, 2000; Pimentel, 2008). Female primary teachers may only marry upon authorisation from the minister; nurses, operators or air hostesses may not, at all (Rosas, 1990).

She is only surprised that books such as *A mulher* are kept in the library at all. Arriving home she tells Mama about her experience: “I felt like one of those women living in Switzerland, reading and all, not being gazed at, not afraid of being named a 'literate' or a 'wiseacre’14 as those boys in the street called me and my female colleagues when entering the faculty carrying our books.

3. Theoretical analysis and discussion of results

*Women and space*

The figurations of the Angel-Cinderella-Luxury Doll triptych are typically a bourgeois construct, as its latter fold most clearly shows, eroding individual, cultural, social-class or ethnicity differences among women. Deconstructing and overcoming those representations was a task to be inscribed in later feminists' agendas. Many of the contemporary Portuguese feminists shared a positivist faith in progress and in widespread teaching which would afford the end of many of the gender inequalities (Silva, 1983; Ferreira, 1935:46).

The home to women, the square to men15, went the popular saying. As stated above, women are not absent from public space in the 1950s Portugal. Working-class women might be seen in the streets, in semi-public places such as stores, and public services facilities. They move more freely, out of economic necessity (Vicente, 2001), and these are the most silenced, and, most probably, the greatest pragmatic contributors to the securing of these spaces. Doors and windows begin to open up to higher social class women in the second half of the 19th century. The patriarchal gaze had, however, constructed a landscape through a selected reading of visual cues: on one hand, the presence of women in public space was symbolically erased - as some urban figures may be erased in present times - beggars, homeless persons; on the other hand, the sexually loaded figure of the woman was to be emphasised, though negatively. The mechanical eye of the photographic camera did register women in the streets, as we concluded from the analysed images.

Space was in fact, as Lefebvre might say, not only scenery for women's struggle but also its object (1991). In Kerber's words “the evidence that the woman's sphere is a social construction lies in part in the hard and constant work required to build and repair its boundaries” (1997). Along with it, women's new role as

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14 Silva, 1983
15 popular saying cited by Neves and Calado 2001, 25
public library readers also reinforced women's identity in a positive way, in a period when it was clearly being re-constructed, through the incorporation of new experiences in their everyday life (Alcoff, 1994). Contradictions in representing women's role as public space users are evident: as contributors to the “moral uplifting” of public space their presence is tolerated (van Slyck, 2001; Merrett, 2010); they were sometimes accused of ignoring the implicit social code of conduct for such spaces: there were complaints about women giggling and talking in the British Library, ripping plates off fashion magazines, about young girls eating strawberries in the company of male students (Baggs, 2005) or simply for disrupting spaces conceived of as male (Hoberman, 2002).
A similar form of separatism, according to ethnicity, grounded the creation of rooms for U.S. black readers (van Slyck, 2001).
No record of separatism in other public or semi-public spaces in Portugal is known to us. The only exceptions we encountered, in those decades, were those of public primary and grammar schools (Neves and Ca lado, 2001); similarly, when attending mass, women were supposed to occupy the benches in one aisle of the church and men the other, a practice observed in the countryside in the 1940-50's, and still for some years on. And the sole documented cases for public libraries are Lisbon's Popular Library and Porto's Municipal Public Library. In the U.K. or the U.S., there were women parlours in post-offices, public transportation waiting-rooms, banks, restaurants, etc., from the end of the 19th to mid-20th centuries (van Slyck, 2001).
According to Landes “women's public silence in the post-revolutionary West [French Revolution] is an imposed condition of relatively recent origin”, tied to industrialisation. And so “the structures of modern republican politics can be construed as part of an elaborate defence against women's power and public presence” (1988:203-204). Portugal, an incipiently industrialised country, had, for this matter, different economic, cultural, historical conditions: women had soon, and in great numbers, left the home to work for a wage; women's status could be high in some rural regions (Durães, 2000).
Accordingly, we adopted the concept of gendered spaces, instead of the dual spheres binary, which oversimplifies the relations between private and public, or female and male, as a more realistic analytical tool to deal with spatial gender differences and relations (Kerber 1997; Merrett 2010). But we also stress the need not to erase other issues such as, for the case under analysis, social class, and situational issues such as history, culture or economics.
Another sort of invisibility emerged during this research: the lack of women's biographies, even those outstanding women such as Virginia or Tilia Dulce. Was it not for Tilia Dulce's marriage to a prominent man, documentation would surely be even more difficult to locate.
The Feminine Reading Room

It should be noted that this library's space was itself the object of moral vigilance and police surveillance: the meeting of "creatures of different sexes" in the cloister, had been reported as leading to "scandalous scenes"16. Two photos in the article on the inauguration (Inauguração... 1945) show an empty room from different angles, and one portraits some of the persons intervening in the ceremony. The above photo of the Room is undated. It may have been staged to show a group of young girl students accompanied by a female teacher (on the far right).

[figure 4] Tília Dulce Machado Martins, photograph owned by the family, dated 1894

The topographic card catalogue produced for this Room still exists. Analysing the catalogue and the related books, we concluded that most of them were not to be considered “appropriate” for a feminine readership then, as discussed further. These books exhibit a special stamp: Donated by Tília Dulce17. According to her goddaughter and second niece, she was a rich woman (1876?18-1937), born in Brazil, from a family of broad-minded republicans, whose third husband was a colonial governor of India and minister of the first Republic. She donated 2992 books to the library in her will, which were incorporated in 1938 (Biblioteca Pública Municipal do Porto, 1984). Her name also shows up as a donator to a national museum in Lisbon (Pinto, 1939). This was, undoubtedly, a bibliophile's collection and one characterised by progressive ideas. However, we could not confirm whether this donation was purposefully made for the new Feminine Reading Room. Virginia was the daughter of the 1st Count of Nova Goa (India) which made her acquaintance with Tília Dulce very likely, and an interviewee came to confirm that they were friends.

Her legacy holds, predominantly, titles by authors associated to the French Revolution (e.g., Lamartine); by French writers (Daudet, Baudelaire, Balzac, Molière, Verne, Hugo, but also Zola and Proudhon); by Portuguese 19th century novelists, many also liberal politicians (Herculano, Castilho, Oliveira Martins, Garrett, Camilo, Teófilo Braga, Eça); by Conan Doyle or by Boccacio. Many were certainly blacklisted by the censorship – as Marx’s and Engel’s Manifest or Kropotkine; there are books on parliamentary matters and hygienism, but also technical books on oenology, chemistry and physics; a few bound newspaper titles are also included, those of a humoristic genre exhibiting popular caricaturists' works. Several novels by Virginia, by Stefan Zweig and Emilio Salgari, were added to the collection later, as well as approximately two

16 report dated 13th July 1944, in the Library's administrative archives
17 see Tília Dulce Machado Cardoso in GeneAll.net – Portugal; she became Tília Dulce Machado Nogueira, following her first marriage; she took her third husband's surname, Martins, later.
18 according to a relative's recollection she was 18 years-old when the picture was taken; so this a likely date for her birth
hundred titles authored, prefaced or translated by Camilo Castelo Branco. These latter titles, on the contrary, correspond to an expectable selection to be made by the municipality appointed commission. Tíli a Dulce's collection must have been integrated as a whole, following the usual process with legacies. However, it should be noted that free-access to those books was not granted, in those days.

During the first weeks of existence, visitors were, predominantly, what appears to be groups of students accompanied by one teacher, which came to coincide with our interpretation of the Room's picture. Later on, female visitors' occupations become more diversified, and housewives, painters, writers, a civil engineer, an architect, seamstresses, a fishmonger, may be found in the registry book, although students largely outnumber them. It became evident that there were frequent visitors, including dyads, some on a daily basis, which was confirmed by our interviewee. Visits totalled an average of 20 female readers per day, although some women were also registered in the General Reading Room by day and even by night, as the feminine room was open only from 11 a.m. until 5 p.m. Comparatively, the General Reading Room received much more socially diversified readers, including several manual workers.

No statistical registers were made on readers’ sex prior to the opening of the Room, and so we can only guess that it encouraged female visits. The Feminine Reading Room was the object of extension works in 1947 and in 1952. Its visitors increased significantly between 1948 (3.3% of in-room readers) and 1950/51 (more than 10%). The Room closed, most likely, after August 1953, as no more statistical data were collected on it. However, it should be noted that, from that moment on, women were required to seat in a separate ally of the General Reading Room, requirement which ended only in the 1960's.

### 3. Final reflections

Women were not absent from public space then, their presence was frequently forced into social invisibility. Separate spaces eventually contributed to processes of women's appropriation of public or semi-public space. Their attendance made women's presence customary, allowing them a previously unacknowledged visibility.

Biographical research on two prominent women's lives was documented only at much effort, with all the traits of another form of gender invisibilisation. The provision of literature in the Feminine Reading Room does not appear to have been so ideologically controlled as might be expected; the fact that many titles were donated by a woman from a notorious family, along with the tradition of incorporating legacies as a whole, may be a partial answer to this.

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19 (1825-1890), Camilo was a Romantic Portuguese novelist with an extensive production.
References


Fundação Instituto Politécnico do Porto; Instituto para o Desenvolvimento Tecnológico. 2000. “Realizadoras Portuguesas Notas Biográficas” in Mulheres portuguesas


Lamas, Maria. 1950. As mulheres do meu país. Lisboa: Actuális.


Is It Really on the Web and What Does That Mean for Instruction and Reference?

Aline Soules

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Abstract: Assumptions are frequently made about what is available through the Web and those assumptions are often voiced by librarians as well as users, affecting collection decisions, information literacy instruction, and reference interactions. Based on a spring 2011 project comparing biographical information for literary authors writing in English in two commercial databases, Wikipedia, and through Google searches, the author changed her approach to her information literacy courses and reference interactions, not just her collections work. The author will briefly outline the project and offer implications for collections, information literacy, and reference, and emphasize the value of a continued generalist approach to librarianship.

Keywords: Wikipedia, Web, collection development, content comparison, instruction, information literacy, reference

1. Introduction

Assumptions are frequently made about what is available through the Web and those assumptions are often voiced by librarians as well as by users. These assumptions on the part of librarians affect collection decisions, information literacy instruction, and reference interactions. One such assumption contributed to a decision to cancel a database that was important to the English Department at California State University, East Bay (CSUEB). This, in turn, led to a sabbatical project by the author, who confirmed that reliable, authenticated biographical information is not all available through the Web, but who also found that both Wikipedia and other sources available through Google searches have information to offer if used appropriately. This has important implications not only for collections decisions but also for information literacy instruction and reference interactions.

CSUEB is classed in the U.S. as a “comprehensive” university, offering undergraduate and Masters’ degrees to approximately 13,000 students. It is considered a “teaching” university, although CSUEB faculty engage in the traditional combination of teaching, research, and service. The university also offers a strong First Year Experience (FYE) that includes a required two-credit information literacy course for all incoming first-year students (sections are F2F, hybrid/blended, and online).
Below is a brief outline of the sabbatical project; how those factors have influenced the author’s collections decisions, information literacy instruction (credit courses, embedded information literacy, and one-time classes), and reference interactions (F2F and online); and how this process has re-emphasized the value of “holistic” librarianship where librarians avoid specialization and participate in collections, instruction, and reference in order to enable learning and research in one area to inform and improve work in related areas.

2. The Project

An example of a librarian assumption about the availability of information on the Web arose in the 2008-2009 academic/budget year, during yet another California budget crisis. After several rounds of cuts in previous budget crises, librarians were forced to decide what core databases would not be renewed. Decision-making criteria included the need to cover all disciplines taught at the university, the relative cost of various databases, and use statistics; however, assumptions about what was and was not available through the Web also came into play.

First to be cut was a core database for the English Department called Literature Resource Center (Gale/Cengage) that offers both biographical and critical information on authors. A key factor in this decision was the opinion that the critical information could be covered by the MLA International Bibliography and that the biographical information was largely available through the Web.

Despite the cancellation, the author decided to test this assumption during a sabbatical project in spring 2011. To set parameters, searches were limited to biographical information for literary authors writing in English. A pilot was conducted in fall 2009/winter 2010 with fifty names taken from CSUEB Masters’ theses. Biographical content was compared in the biography portion of the database that was cancelled (Contemporary Authors Online, part of Literature Resource Center), a comparable database called Biography Reference Bank (Wilson at the time of the project, now EBSCO), Wikipedia, and the Web resources other than Wikipedia as searched through Google.

In fall 2010/winter 2011, the names of five hundred authors were gathered by reviewing curricula and textbooks from across U.S. higher education institutions. In spring 2011, the names were searched in the same sources as in the pilot, and results were tabulated and compared. The conclusion was that reliable authenticated biographical information is not all available through the Web; however, the author gained increased respect for Wikipedia and found that both Wikipedia and other sources available through Google searches have information to offer if used appropriately.

For example, while commercial databases offer researched and vetted information, open sources can provide more current information, updating what is found in commercial sources or providing unique information that does not fall into the parameters of coverage by commercial databases. There are also some primary open sources available through the Web, such as authors’
personal Web sites, although these should be evaluated for their pr elements and the self-editing aspects in which authors sometimes indulge. In addition to the critical need to evaluate open sources, there is also the question of copyright and what may or may not be used or cited and under what conditions. Another major consideration is the stability of various sites as compared to commercial databases. There is no control over what goes up and down on the Web; with commercial database, the issue is budget and whether the databases can be re-rented the following year.

Ultimately, this suggests a combination approach to information gathering, which has important implications not only for collection decisions, but also for information literacy instruction (formal courses, embedded information literacy, one-time classes) and reference interactions. Further details about the project itself can be found in the article in New Library World (2012).

3. Collections Implications

Selection and de-selection have always involved checking on the framework of the library’s existing collection. For selection, this involves checking for duplicates in the library or consortium catalog, checking OCLC or Worldcat to determine whether it would be better to purchase a copy or let students use interlibrary loan. Now, added to that, is the very real need to see what is available through the Web, whether through search engines like Google or through one of the many other Googles (Scholar, Books, etc.) or in an open source such as the Directory of Open Access Journals or Highwire.

De-selection is even trickier. After checking the same sources plus circulation statistics, selectors may discover that the library is the only holder of this particular item. What then? Keep? Discard? Alternately, there may be other sources for that information, but will they remain or disappear or no longer be accessible if there is a shift to an e-format of that information?

The traditional collection process is clearly more complicated than it used to be.

Another consideration is the creation of content. Libraries are creating more content than ever, in the same way as the world at large. Whether through a commercial product such as LibGuides or library-created content through its own Web site, a Wordpress blog, or some other source, the librarian must engage in a new form of collection process that brings together sources into a “package” for users, whether generally or on a particular topic for a course or project. The actual materials may be much more scattered than in previous settings.

4. Information Literacy Implications

The distinction between information literacy and library skills is even more critical as users view open source materials. The same roadmaps are no longer in place. Instead of pre-publication authorization by editors or peer reviewers,
for example, the user must evaluate every single item that shows up in a results
set and must be also be able to identify its source—a database, a scholarly
journal, a commercial Web site, an ephemeral publication, something that will
be in place the next time it is searched, something that may exist but may only
be retrieved through an entirely different route. While evaluation has always
been critical for information literacy, there are fewer anchors. In a database, a
student can check “scholarly peer reviewed” and rely on the results meeting that
criterion and usually remaining in the same place when they are sought again. If
the same search is conducted in Google Scholar, these anchors are missing,
whether all the results contain scholarly peer reviewed articles or not. If the
search is repeated on a different day, the results may have shifted either slightly
or significantly. For information literacy instruction, this puts even more
emphasis on the need to teach evaluation and identification.

Evaluation and identification, therefore, are even more important
“threshold concepts” than they were before. Threshold concepts were originally
developed by Meyer and Land (2003). They offer a potential way of describing
levels of understanding in a subject that could be used in assessment for
learning. Meyer and Land define threshold concepts as having five
characteristics. They should be transformative, shifting perception of the
subject; irreversible, making it impossible to return to viewing the concept as
previously; integrative, exposing the previously hidden interrelatedness of
something; bounded, helping to define the boundaries of the topic; and,
possibly, counter-intuitive or leading to knowledge that is inherently counter-
intuitive. In grasping a threshold concept, students move from common sense
understanding to an understanding which may conflict with perceptions that
have previously seemed self-evidently true. Ultimately, the intent is to provide
a pedagogical framework to teach foundational concepts in a particular
discipline.

Townsend, Brunetti, and Hofer (2011) have applied threshold concepts to
information literacy. Their identification of these concepts is still evolving;
however, these concepts include the following:

- Information formats result from how they were created and shared.
  Shifting the focus from the end point to the process helps to clarify
differences between books, articles, journals, and various types of
formats delivered over the Web.
- Authority is constructed and textual, based on evaluative criteria
  specific to the context in which the information is both found and
delivered.
- Information is a commodity. This helps students to understand the
difference between what is free and what is paid for, which
subsequently leads to discussions about proprietary databases,
intellectual property, open access, and citation.
- Primary and secondary sources differ. This is particularly important
  when students move from one discipline to another because each
discipline creates and uses these sources differently.
Discussions with the authors of this article have led to the identification of a number of possible additional threshold concepts. For this author, the fundamental difference between information gathering and a research question has emerged as critical. The use of the word “research” has proliferated to the point where it becomes important to differentiate between “research” on where one might go to dinner and a “research” question that requires original exploration.

While some of these concepts apply regardless of the shift in where information resides, an argument can be made that, in some cases, their significance has shifted and, in others, there are new concepts to consider. The importance of evaluation and identification, for example, have gained in stature as more evaluation must now be conducted post-publication and students need more awareness of the actual nature and format of the information. This circles back to the sabbatical project and the beginning of this section.

As a result of the sabbatical project, a number of elements in the credit course were scrapped. More exercises and attention were given to activities from analyzing and evaluating Wikipedia articles through decoding citation, that is, identifying the type of information format represented by various citations. Less concern and attention was given to basic library skills because students may consult a librarian at the reference desk for such specifics.

In addition, an anecdotal exploration of faculty perceptions about Wikipedia revealed a range of approaches from “never” to a final exam called HistofCalipedia. Based on her belief that students over-used Wikipedia, Dr. Linda Ivey embedded this final in BlackBoard, CSUEB’s learning management system. She required them to read Wikipedia’s disclaimer about research and create a Wikipedia-like entry for various topics she developed for them to use. Requiring references, a bibliography, and other Wikipedia elements, students gained a better understanding of the strengths and weaknesses of this encyclopedia as they created entries and classmates “adjusted” them.

An example of embedded information literacy resulted from collaborative work between the author and Dr. Sarah Nielsen, coordinator of the MA TESOL program at CSUEB. Dr. Nielsen became frustrated with her students’ lack of understanding about certain information literacy fundamentals when they reached their thesis stage. To address this, information literacy concepts, particularly evaluation, were embedded in all core courses of the program. Assignments and some of the results of those assignments can be viewed on the course Google site at http://sites.google.com/site/tesolcsueb/information-competency-tools/threshold-concepts. Of particular note are the Web evaluations, of which there are now over fifty (50). This assignment not only requires students to evaluate various TESOL-related Web sites, but also positions them to begin sharing their evaluations as part of the larger world of academic discourse. These evaluations are shared on the Google site, thereby adding content to the Web.

In various discipline-related classes, emphasis on evaluation and identification have also taken preference over basic library skills. Even when
students are anxious to get “shortcut” ideas for the assignments that have prompted the information literacy class in the first place, focusing on foundations and threshold concepts ultimately proves more efficacious.

5. Reference Implications

Reference at CSUEB is a teaching endeavor, not a place where students and faculty visit to get answers to problems. Of course, efforts are made to ensure that students will identify the necessary information for their papers and projects; however, the primary goal is to ensure that they can repeat these processes when they leave the library and are working on their own at home or elsewhere.

Since the sabbatical project, the same redirection to evaluation and identification has been taken. Whether working with students on search terms, explaining the features of various database platforms, exploring search engines or even Wikipedia references, ensuring that students know what they are viewing and helping them to evaluate both the information and the source of the information are primary goals.

Overall, references transactions of this sort take longer. If it is busy, more juggling among reference questions takes place; however, it is important to encourage students to explore these concepts while still at the reference desk. That way, there are opportunities for further conversation about these issues and for more in-depth teaching. Students are also encouraged to conduct searches at reference desk terminals in order to ensure that they have a better chance of being able to replicate the search or conduct a similar search on their own.

There are also more questions directed to the student: “Are you sure that’s the right source for your paper?” “Where is that information coming from?” What might be your next step? Can you develop a citation for this information, both in-text and in the end bibliography? These questions must be placed carefully into the conversation in order not to drive students away.

6. Conclusions

Information is shifting, both in format and location. More is electronic and not necessarily in traditional format; more and more is available through multiple paths. An article may be found through a commercial database with full text available through a subscription journal, but its preprint could be on the open Web for free. Conversely, free information, such as conference proceedings, can sometimes be picked up and reprinted by subscription journals, such as IFLA papers. Students search through Google and get stopped by a request to pay. Some, desperate at a last minute deadline, may do so and may later find out that the library pays for a subscription to that journal, but the path they followed didn’t take them in that direction. The author’s sabbatical project emphasized just how tortuous some of these paths can be and how critical it is to figure out how to blend these various sources and paths to gather the full range of available information on a particular topic.
Perhaps more critical is the re-affirmation of librarians as generalists. In this age of specialization, librarians need to know as much as possible about the processes and patterns of various disciplines in order to help students understand how some of the basic concepts of information literacy are applied in a particular discipline and how they shift from one to another.

Another aspect of being a generalist is within the field of librarianship itself. The author’s sabbatical project began as a collection project, but ultimately influenced other areas of librarianship—instruction and reference particularly. In this age of specialization, where librarians specialize in one or another of these areas, CSUEB librarians have insisted on maintaining a foothold in collections, liaison work, instruction, and reference. Some areas, such as systems and technical services are handled in a more specialized way, but even these are under the aegis of small librarian committees that include a wider range of librarians.

There is also the practice of applying research in one area to inform and improve work in related areas. This not only speaks to the generalist approach, but also emphasizes the importance of applying research to make a difference. Results may be written up and shared, which is laudable, but some overt outcome validates that the research has made a difference. In the end, that is what most librarians strive to achieve.

References


Another perspective on library use
Learning from library non-users

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Abstract: This paper seeks to provide insight into the reasons why students do not use the library for research in order to improve library services. The case study encompasses a mix of two methods. First, it used an in-class survey among undergraduate students at the American University of Paris to measure how many students do use/not use the library in a situation of information need. Second, the researcher conducted 11 interviews with students that said that they had not used the library or its resources (print or online) for researching and writing one identified paper. By taking into account the situation of research, it is possible to describe students' behavior in different situations providing a more specific picture in comparison to other studies focusing on general patterns.

Keywords: Library use, library non-use, user study, library research, mixed method, triangulation, in-class survey, ethnographic interviews.

1. Introduction

Why do library non-users matter? Because there are AUP students that do not use the AUP Library! Non-use exists, but we do not see it. In fact, it is not simply the observation that students do not use the library but rather their reasons for library non-use that matters. The following case study seeks to take non-use on its own terms and examine the ways in which non-use might be relevant, conceptually and practically, for libraries' future use.

Nicholas et al. (2008) share the importance of understanding users today. They argue that information professionals have not sufficiently taken into account the changes caused by the Internet in matters of understanding library users (and non-users).

“Worryingly, while most people in the information professions are alert to the technical changes that have taken place in the virtual information space, when it comes to users many are going about their business as though nothing really fundamental has happened. […], but they have not really made progress in understanding them, certainly not their behavior at the coal-face.” (Nicholas et al. 2008, pp. 3-4)

Despite the pessimistic view they take on their colleagues, the authors have a point. Without understanding the social dimensions of technological change, information professionals may become blind to user needs and risk losing the
library’s role as a major information provider. Consequently, explanations of library non-use become important in evaluating the library’s future role. Various studies in technology stress the importance of non-use for the understanding of use. In their book *How Users Matter*, Oudshoorn and Pinch (2003) investigate how the understanding of technology use has to take non-users into account as well. They conclude that “an adequate understanding of socio-technological change should include an analysis of resistance and non-use” (Oudshoorn and Pinch, 2003, p. 19).

Similarly, Sally Wyatt (2003) examines Internet use and comes to the same conclusion. Non-use “is premised on the idea that there is something to be gained […] through an examination of those who choose not to travel down particular technological roads” (Wyatt, 2003, p. 69). With this logic, she links Internet non-use to future improvements. In other words, the reasons for non-use could inspire improvements that would lead to future use (Wyatt, 2003, p. 78).

From a historical perspective, Horx (2000, pp. 176-180) illustrates the importance of non-use by referring to the introduction of the automobile at the beginning of the 20th century. The automobile’s use was not something automatically given, but took time to build: a comfortable and sophisticated automobile, paved streets, and lessons on how to drive created a time lag between the introduction of the car and its practical use by the broader public. Horx picks up Naisbitt’s argument (1992) that technology only matters if it takes into account human needs and concerns. In regard to libraries and its web resources, the non-use can tell us a lot about how they should be shaped in order to be used. In this way, it is not the user that matters but the non-user.

However, most library studies focus on how libraries are used (Stoepel 2010, pp. 10-17) and there are good reasons to do so. Yet, “a narrow focus on use [...] inherently renders insignificant populations analytically invisible.” (Dourish and Satchell, 2009, p. 4) Non-users stay at home, go to the computer lab, or sit down in the cafeteria to research, study, or write their papers. But why do they prefer staying at home or studying in a cafeteria if the library can provide all the information they need?

To paraphrase Dourish and Satchell, using libraries is only one way of relating to libraries, and only one dimension from which librarians can learn about interactions between users and libraries. The focus is on not using libraries – ways not to use them, aspects of not using them, what non-using libraries might mean, and what librarians might learn by examining non-use as seriously as use.

**1.1 Research questions**

The aim of the research project was to study undergraduate students at AUP who do not use the AUP Library or its web resources for their class assignments (Stoepel 2010, p. 45). It is about studying their information seeking behavior in a situation of information need (courses).

The opening focus will be to measure the use/non-use of the AUP Library: where do students find information to fulfill their class assignment? In this way, library use and the library’s’ involvement in research can be measured.

In a second step, the study will draw attention to the information seeking behavior of students who do not use the library as a place to study and do not
use the library resources (print and web). The central question is: why do students not use the AUP Library and its web resources, and how these students do research for their class assignments?

The aim in the present study is to identify roadblocks that are linked to the context and the situation of the research process. The findings will contribute to the discussion about the role of the library in academic research and the evaluation of libraries and their web resources today.

1.2 Research methodology – a mix of two

This study is based on a mix of two research methods - each backed up by research methodology - since the objective is to obtain high quality information. Deacon et al. (1999) supports such methodological undertaking. He proposes a mix of approaches for data-gathering (Stoepel 2010, pp. 27, 44) and data-analysis. “[…] when quantitative and qualitative approaches are used methodologically in combination with each other, the resulting analysis is invariably stronger.” (Deacon et al., 1999, p. 134).

The first methodology is a quantitative approach (an in-class-survey) in order to measure the size of the non-user group. The survey was conducted in different classroom settings chosen in a simple random cluster sample (sampled 14.43% of students out of the undergraduate student population and 67.48% average response rate per in class-survey). The survey was not handed out in courses that did not mention explicitly a need for research but were part of the sample (Stoepel, 2010, pp. 32-35, 93).

The advantage of handing out questionnaires in class is that it avoided creating bias by conducting the survey within the library or online only (Dollinger, 2003). Second, it is easy to add more meaning to the class room setting either by talking to the professor or analyzing the course syllabus. Third, students who might never reply to online surveys or use less technical equipment were better represented in the survey. Professors also indicated the number of students missing during the survey (who may represent a big part of library non-users).

The second research methodology is a qualitative approach that draws attention to the group of non-users only. It is an ethnographic approach (semi-structured interview) that follows students through different steps of their research process until the moment of having to hand in the paper (Stoepel 2010, p.45). The aim of the qualitative interviews is to get a more detailed insight about library non-users researching behaviors and the roadblocks to library use. The interviews add more details to the in-class survey about how non-users complete their class assignments.

The qualitative part follows in the footsteps of Gilbert Ryle (1971) and Clifford Geertz (1973) applying the method of ‘thick description’ to analyze interviews (Stoepel, 2010, p. 48). It is by adding layers of information to the context that meaning is added and the researcher obtains a better understanding of the information seeking behavior and its situation (Ponterotto, 2006, pp. 542-543).

Both research methods and research questions were linked to one specific paper assignment. In the case of the in-class-survey, the questions were only related to the assignments for that particular class. In the case of the semi-structured interviews, the questions of non-use were only in regard to one paper that was
defined at the beginning of the interview. The linking of the questions to a particular paper assignment allowed to get more information about the situation and to establish a link between information need and information seeking behavior.

2. Quantitative analysis – general findings

According to the survey, 79.1% of students claim to use the library when they have to write a paper for a particular class. Only 20.9% declare not to use the library or its homepage (web resources). However, only 45.1% of the 79.1% users use the library regularly (‘one time a week or more’) while 40.2% of library users visit the library only ‘once a month’ or ‘twice per semester or less’. The online use of the library resources does not differ significantly. 37.1% regularly use the library web resources (‘one time a week or more’) and 35.2% use them ‘only once a month’ or ‘twice per semester or less’. These figures show the intensity of library use in regard to their specific information need.

At a first glance, it is a ‘good’ result seeing that 79.1% of students use the library. Four out of five students use the library in a situation of information need. Yet, this finding must be viewed in the light of the different classroom settings. Library use and non-use varies in different courses (see table 1: Library use/non-use by course).

The differences are significant especially in regard to the replies of the AH and BA students. 100% of the AH students reported to use the library materials for research (response rate 85.7%). On the contrary, in the BA class, 50% of the students declared that they wrote their papers without library materials (and another 5 out of 13 students in the class were absent on the day of evaluation). Out of the 50% of BA students using the library, 75% reported to use the library only two times per semester or less as a place to study. In comparison, AH students show a much higher rate of library usage. 40% of them use the library two or more times a week as a place to study and 40% use the library resources once a week.

Table 1: Library use/non-use by course
Another aspect to keep in mind when comparing the courses’ library use is the professors’ expectations and assignments. In the AH course, students had to write a 15 page research paper. In addition, AH studies at AUP (and in this particular course) require readings on reserve. The fact that the professor sets high standards for the research paper explains the high use of the library. In contrast, typical assignment types in Business studies at AUP are case studies or power-point presentations that require less research than research papers. Furthermore, the topic of the BA course was ‘Cyber Marketing’. In other words, the professor asked the students to perform internet research related to ‘Cyber Marketing’. This may explain why students did less research using library resources. Also, the professor did not put any of the required readings on reserve in the library.

In conclusion, library use differs according to the different class-room settings. The role of the library in researching and finding information varies according to the academic disciplines. As previously seen in the analysis of the course syllabi, certain disciplines do not require research at all as it is not part of the learning objectives. In the same logic, the class room setting and the subject determines the level of engagement in research.

2.1. Reasons for library non-use

The reasons why students do not use the library homepage to satisfy their information needs are varied (Table 2). The main reason seems to be that the library homepage is not easy enough for them to use (43.5%). These replies accompany the assessment of 13% of students who claim not to know how to use the site or that they are unaware of what they can find there (8.7%). Furthermore, for 13%, the webpage is ‘not fast enough’.

Additionally, the open reply provides other explanations for non-use on a conceptual level. Either, the student perceives no real need to use the library (no1: “Do not need to”; no2: “depends, whenever I have papers, I will use the library”; no6: “no reason”), or the library non-use is associated with the library
building (no4: “Like to work at home”; no5: “The Library is a bit far from my place”). Furthermore, the student may doubt whether s/he will find what s/he seeks in the library (no7: “Not many books available. Library does not have a wide variety of books”). They may claim that searching elsewhere is more effective (no3: “Finding research online is much easier and more effective”).

**Table 2: Question 8 - Why don’t you use the library homepage?**

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t know url</td>
<td>30.4%</td>
</tr>
<tr>
<td>Don’t know how to use it</td>
<td>13.0%</td>
</tr>
<tr>
<td>Don’t know what I could find there</td>
<td>43.5%</td>
</tr>
<tr>
<td>Not easy enough</td>
<td>8.7%</td>
</tr>
<tr>
<td>Not found enough</td>
<td>13.0%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>8.7%</td>
</tr>
</tbody>
</table>

It was interesting to discover where students find their information since they often experience a situation of information need. When asked, where they find information, most non-users responded that they use the Internet as an information source.

**Table 3: Question 9 - Where do you find your resources or information to write your paper?**
Google beats Yahoo as the search engine and Wikipedia is used by every other non-user. These replies must be related to question number three of the questionnaire involving where students begin their research (“How likely are you to start your research with?”). 91.7% of respondents were ‘likely’ (33%) or ‘very likely’ (58.7%) to start their research with Google. It may be possible to conclude that in information seeking behavior, the student will start by using Google and if satisfied with the results, they will not turn to the library resources.

The same logic applies to the other replies. From this perspective, 46.2% of non-users declared that their professor gives them articles/books and 34.6% buy their books directly in a book-shop (Amazon or the university bookstore). The open questions confirm this logic as well. Students satisfy their information need elsewhere before seeking the AUP library. They might use their ‘old’ libraries (no3: “Home university”; no4: “GWU Library is easier to use”) or go to known places (no5: “Online Journals”; no7: “JStor”). Surprisingly, they do also mention the AUP library as a place to find information.

In summary, the survey reveals that students do not use the library for various reasons. This mix of reasons turns the non-users away from the library and makes them look for information in other places. These places are numerous but Google, Wikipedia, the Internet in general, and the professor are the major ones. The survey also shows that when comparing courses, there are significant differences in regard to using the library or not. This is certainly due to the underlying concepts of methodologies in the academic disciplines (Capurro, 2006), hence the relation to information that determines the role of the library is different (Boon, et al. 2006). The question that remains is: what is the role of the library in the disciplines that rely less on library use?

### Table: Where do you find your resources or information to write your paper?

<table>
<thead>
<tr>
<th>Resource/Method</th>
<th>Yes</th>
<th>No</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buy them myself in bookstore or...</td>
<td></td>
<td>70.5%</td>
<td>29.5%</td>
</tr>
<tr>
<td>Google or Google Scholar</td>
<td>23</td>
<td>53.4%</td>
<td>46.6%</td>
</tr>
<tr>
<td>Wikipedia</td>
<td>19</td>
<td>55.4%</td>
<td>44.6%</td>
</tr>
<tr>
<td>Professor gives me articles/books</td>
<td>17</td>
<td>58.3%</td>
<td>41.7%</td>
</tr>
<tr>
<td>I do not need books to write my...</td>
<td>7</td>
<td>85.7%</td>
<td>14.3%</td>
</tr>
<tr>
<td>I do not need articles to write my...</td>
<td>8</td>
<td>90.4%</td>
<td>9.6%</td>
</tr>
<tr>
<td>Other (please specify)</td>
<td>1</td>
<td>100%</td>
<td>0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Resource/Method</th>
<th>Yes</th>
<th>No</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where do you find your resources or information to write your paper?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buy them myself in bookstore or...</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Google or Google Scholar</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wikipedia</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Professor gives me articles/books</td>
<td>17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not need books to write my...</td>
<td>7</td>
<td></td>
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<tr>
<td>I do not need articles to write my...</td>
<td>8</td>
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</tr>
<tr>
<td>Other (please specify)</td>
<td>1</td>
<td></td>
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</tr>
</tbody>
</table>
3. Qualitative analysis – general findings

The analysis of the interviews starts with a thematic analysis, which “is generally at the core of qualitative research. Unlike quantitative, you must use your own best judgment about it […]” (Priest, 2010, pp. 174-175). The leitmotif of the qualitative analysis is to ‘speak for the students’ (Priest, 2010, p. 174) and to illustrate the reasons for their non-use. In adopting their perspectives and following their footsteps from situation to situation, non-use makes sense and becomes comprehensive.

The reasons for library non-use are numerous. Numerous because barriers for library use are not only situated in the research process, but are also there before they start researching and writing (Figure 1). It is “all the fuzzy stuff that lies around the edges – context, background, history, common knowledge, social resources” (Brown and Duguid, 2002, p. 1) that matters. Explanations of non-use are linked to the context and the different situations of research in the ‘social life of information’ (Brown and Duguid 2002).

Figure 1: Key situations in the research process

Students already have research experience and everyday knowledge about where and how to find information. After choosing their courses for the semester, the students find themselves in the classroom where they are exposed to a situation of information need. After the definition and recognition of information need, students engage in research having to fulfill the course requirements. The research process goes hand in hand with the writing process – research and writing cannot be isolated from each other. Therefore, ‘following the actors’ means to follow the students in their research process with the aim identifying the roadblocks for library use.

3.1. Roadblocks to library use

The first significant aspect that comes into mind when analyzing the interviews is that students find information in a variety of places. Secondly, they may not use the library for one research paper, but may use it for another. Thirdly, reasons for not using the library are diverse and can be allocated to the different situations (figure 1). Finally, in nearly all interviews, students stress a combination of reasons to explain non-use of the AUP Library. On the one hand, there is a negative library experience and on the other hand, there is a positive experience with other services, providers, or facilities.

I: And the articles, where did you find them? In your old library?
S: Yeah.
I: So you went back to - because you said ‘you’re familiar, you know how to use it’.
S: Yeah, [...] I never come across roadblocks with my old school. I never have a hard time finding articles I need. And if they have something that’s just the abstract and not the full-text, I know I can send an email to my librarian there and within a day, I’ll have it in my inbox. [...] And here [author's note: AUP Library] I don’t know the system as well, and whenever I go to do searches online it’s always telling me, ‘oh I have to pay for this article’, or it’ll show me just the reference. It’ll say that it’s available online, but we don’t have it and here’s the reference, so -
I: You only have the abstract?
S: Right. It’s kind of like, alright, this isn’t helpful, I can click a button and go to my old school and have access to quite a bit more.

Yet, for students, the major criterion to determine library use or not is ‘usefulness’, as expressed in comments such as ‘being productive’ or ‘this isn’t helpful’. This can be a quiet, comfortable, inspiring and solitary space where students can complete their work or, it can be a fast, easy, and efficient interface for students to find and connect to information. Anything that is counterproductive – such as time-consuming activities, complicated interfaces, no access to full-text – is perceived as a roadblock and a reason to turn away from the library to other information providers.

Seeking other information providers can also be attributed to reasons for non-use prior to library use, such as habits, satisfying experiences, and the vast information offerings. Students bypass the AUP Library on account of satisfying everyday searching (i.e. google searching), more time-efficient services, and the knowledge of more satisfying alternatives to libraries. Thus, the AUP Library is thrust into a situation of competition with other information providers (i.e. special web pages, Google, Wikipedia) and learning spaces (i.e. home). Another factor amplifying competition is the new types of information that the Internet offers. While the library suffers from a gap in its collection, the Internet enlarges its advantages with new types of information such as ‘fresh information’, videos, music, speeches, etc.. These new information types are crucial for certain academic disciplines which condemn the library as a secondary information provider. The Internet’s role as information provider goes up while the library’s role declines.

Finally, the role of the professor explains the non-use of the AUP Library and its web resources. Almost every student in the survey (89.8%) talks to the professor about their course-related assignment. As seen in the interviews, often the professor provides the students with articles, books, and web resources that are important for the assignments. In this sense, the professor is the subject specialist who knows which source is ‘of value’. Thus, the professor is recognized as an important source of research help rather than the librarians. Students see the AUP Library as secondary to the professor’s role.

4. 'Moving away'?
Putting the findings of this study in relation to other studies is simultaneously simple and difficult. Simple due to the fact that the survey design resembles other study designs (Booth, 2009; Chapman, et al. 2007; Head and Eisenberg 2009) in measuring library use, and yet difficult since online surveys might not be the most accurate way of data-gathering and measuring library use in comparison to the in-class-survey.

It is made even more difficult by the fact that non-use is not a common subject among information professionals. Ethnographic studies concentrate in general on students who use the library for their course-related assignments (Head and Eisenberg 2010, Warwick et al. 2010) since the non-user is invisible.

From a quantitative point of view, the findings of the at-hand-study are in line with recent library studies claiming that libraries and their web resources are highly used by students (Chapman, et. al. 2007, Booth 2009, Head and Eisenberg 2009).

However, as discussed in the literature review (Stoepel, 2010), the online surveys tend to bias the findings of those studies. The question of whether the findings represent most library users is legitimate. This raises questions about online surveys in general as Dollinger (2003) has clearly pointed out. Library studies do not want to risk drawing inaccurate pictures of their user populations on which they base their development decisions. Their findings make them blind to taking these user groups into account, especially if it is a growing (non-) user group.

Furthermore, the at-hand-study reveals the importance of distinguishing the role of the library for different academic disciplines. As seen in my findings, in almost 50.77% of courses, there was no need for researching. In certain academic disciplines, there is no research required since the learning objectives do not ask for it. For instance, Head and Eisenberg’s study (2009) concentrated only on humanities and social sciences courses finding a high need for library use and its web resources. Yet, the question of library use in other academic courses is not subject to discussion. It would be interesting to see what role the library plays in other courses and if the findings would correspond to those of the humanities and social sciences.

These findings lead to the question of what today's learning objectives are. In each academic discipline, this has to be asked in order to see what role the library plays as an information provider and as a learning space. It is obvious that in language or lower level courses, libraries will not be of high use as no research is requested. However, the question of learning objectives is also linked to the fact that the emergence of the Internet may have an impact on learning objectives. What is learnt today? What skills should students practice in order to be well-prepared for the future? What role does the library play if the learning objectives change?

Given the fact that the focus of the study at-hand was explicitly on non-use, it is difficult to put its findings in relation to the findings of the aforementioned library studies (surveys or ethnographic studies) since they do not expound the problem of non-use.
And yet, these studies identify current students’ research methods and the importance of Google and Wikipedia. These studies conclude that students combine the use of library resources with Internet research. Head and Eisenberg (2010) describe students’ ways of doing research today as follows: “As a whole, these findings suggest that course–related research is a complex and a multi–step process. Students consistently employ preferred problem–solving strategies for course–related research, based on efficiencies and using a mix of self–taught workarounds and some formally learned research methods.” (Head and Eisenberg 2010)

Clearly, it is not only the formally learned research methods that are important for researching and writing but also the self-taught workarounds. Consequently, these findings indicate that different information providers as well as new research strategies are becoming more important.

Research undertaken in the UK claims that information users are “moving away from the library as provider” (Moss, 2009, p. 72). They state that the Internet will replace the library as information provider and the library may stop being seen as a repository where the book is the king. However, the findings in this study cannot confirm this trend of ‘moving away’. This is primarily due to the fact that the design of the present study is not longitudinal. Nevertheless, the study at-hand confirms that there are students that are not using the library (‘they are away’) but this has existed for a long time as Line’s study confirms (1971). Researchers do not only use formal information channels but, as well, informal ones to find information.

The findings of the CIBER study (2008) are in line with Moss when they underline the importance of the Internet. They see “Google Scholar as a real and present threat to the library as institution” (CIBER, 2008, p.13), expressing the place where information seekers will go in the future. This is linked to their findings that “there is much evidence that young people are unaware of library sponsored content” (CIBER, 2008, p.20). The interviews are partly in concert with these findings. Only 8.7% of non-users declare to be unaware of library resources and 13% do not know the URL of the library homepage. On the contrary, the competition over more satisfying alternatives clearly shows that there is a challenge to libraries and information provision, which in turn feeds the argumentation that there is a ‘moving away from libraries’.

Nicolas, et al. (2009) supports the thesis that digital information consumers, as they call the information seekers and users today, are moving away. They go even further than this, saying that libraries are only secondary as information providers today: “[…] in a ubiquitous information environment, information professionals and knowledge providers are no longer the dominant players nor the supplier of first choice”. (Nicolas, et al., 2009, p.5).

Still, the present study does not agree with these conclusions, in terms of seeing such a fundamental change. Certainly, “the information landscape has been totally transformed. Google now channels millions and millions of people to the information they need, on a scale that dwarfs any library […]” (Nicolas, et al. 2009, p.5). This is true for Google as they have understood what the user needs
are and what they want. According to Nicholas et al., this is not the case for the information professionals.

References


On handling geographic data of paper and digital forms in academic libraries: the role of ontologies

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Abstract: The last few years the availability of geographic data in various formats in academic libraries is increasing, bringing back in the spotlight issues that might not have been the focus of library related research for the past few years. Moreover the diversity of the available formats those data can be in, ranging from old-fashioned paper maps to digital maps and from satellite images to digital cartographic data, increases the complexity of the problem at hand. All these data cannot be considered anymore out of scope for the libraries since they are tightly related with the rest of information maintained by them, especially in academic settings where they can have an impact both on teaching and research. On the other hand, the so called digital libraries initiatives have brought into the picture the wide use of ontologies and semantic models in order to facilitate the better understanding among the librarians, the users and the expanded possibilities of using the material itself. The focus of the work discussed in this paper is to analyze and present ontology based solutions that would allow academic libraries to combine current or future semantic based catalogues with ontologies that describe the spatial characteristics of such items. The tools to support such implementations become slowly but increasingly available and this makes its implementation more apparent for the academic libraries of the (near) future.

Keywords: digital libraries, ontologies, semantics, map, geographic information

1. INTRODUCTION
Geolibrary is a library that contains geographically referenced information, i.e. information that has a geographic extension and relates to a specific “area”. The development of the geolibraries is shaped in the framework of the global economy and the quest for “fast and easy access to the information” and since this information gets more and more tied to the space and the time it takes place. Actually nowadays, more and more data with a geographic extension or reference are available but they do not necessarily have a uniform nature. Thus we can include in these data of interest items like paper maps and old
(architectural or topographic) sketches but also digital data in various formats and shapes that can constitute or be included in a map. But why are geo-data becoming increasingly important for our libraries? Mainly because more and more information that is catalogued in a library is based on or refers to them. Additionally more and more geographic related data are becoming available and need to be stored and be accessible in the same area where other pieces of information can be found and retrieved in the same way that the rest of the library information is retrieved.

So a library can possess, register, manipulate and curate such kind of data; then the follow-up question should be how it would do it. Using standard cataloguing techniques is always one of the ways to go. But this cannot be enough. One aspect under consideration here can be the fact that geolibraries are by nature distributed since a lot of information has a topical aspect; thus it is much easier to find information about a place in the "local" library than in remote libraries. In that sense another interesting challenge could be to unify this kind of disperse information in a way that would be transparent to the users.

Recent advances to information science usually found under the auspices of "digital libraries" and semantic web initiatives can give us the necessary conceptual and informational tools in order to respond to the challenges described above. In that sense we can use ontologies and other conceptual schemas to integrate the information space and semantic web query languages and tools to retrieve and manipulate this information.

This paper is structured as follows: next section provides a brief overview of efforts in the area and the one after that discusses metadata and the semantics around geolibraries. Finally we draw some conclusions and provide some pointers for future work.

2. RELATED WORK

There have been various efforts throughout the years in order to support integration of geodata into academic libraries both at the conceptual and the implementation level. Various issues have been raised since 1994 (Coxe and Fitzpatrick, 1994). The most notable effort – and one of the pioneering ones in the field – has been the Alexandria Digital Library (ADL) project\(^1\), started in 1994. The project is hosted by the Map and Imagery Laboratory of the Davidson Library of the University of California, Santa Barbara, USA and has greatly contributed to the enhancement of the field since it can show contributions in various areas like the conceptual modelling of the domain, the wide use of a gazetteer service, which contains more than 6.5 million records and even the introduction of the Alexandria Digital Earth Prototype (ADEPT)\(^2\). The Gazetteer is of special interest to us since it includes a complex feature-

\(^1\) http://www.alexandria.ucsb.edu/
\(^2\) http://www.alexandria.ucsb.edu/research/learning/index.htm
type thesaurus, which includes the notion of the Geographic Namespace (i.e. a spatial partition of a region into uniquely named sub-regions) and is highly related to the modern ontology based digital libraries (see Figure 1). The digital library has been built according to MARC\(^3\) (Machine Readable Cataloguing) and the FGDC (U.S. Federal Geographic Data Committee’s) Content Standard for Digital Geospatial Metadata\(^4\).

Besides this there have been other notable efforts around the world with the most notable being in the US the efforts by the University of Washington and North Carolina State University (Abresch et al., 2008). In Greece the most notable effort is initiated by the University of the Aegean. Other efforts have been undertaken by WAML (WAML, 2009) and some are also described here (Shawa, 2001), mostly from a software perspective.

3. METADATA, GEOLIBRARIES AND THE SEMANTIC WEB
Metadata play a crucial role in digital geolibraries; they are the main means of information integration and are used as the way to record and subsequently identify properties of the data that can be of interest and can also be used to provide a common ground for data coming from different sources. In academic geolibraries metadata standards that are coming both from the libraries’ scientific communities and from the geospatial scientific community should be applied since the effort is to bring those worlds together and make data usable in all environments.

\(^4\) [http://www.fgdc.gov/metadata/csdgm/](http://www.fgdc.gov/metadata/csdgm/)
\(^5\) [http://www.alexandria.ucsb.edu/gazetteer/](http://www.alexandria.ucsb.edu/gazetteer/)
Various efforts through the years have dealt with the issue of managing metadata for digital geolibraries, thus resulting to the proposal of a handful of related standards.

One of the earliest ones is the “Content Standards for Digital Geospatial Metadata”, created from “Federal Geographic Data Committee” (FGDC). Another one is the ISO-TC 211\(^6\), which is a generic ISO standard on metadata. Also metadata standards on spatial metadata are highly relevant. The most interesting from them include the FIPS 173: Spatial Data Transfer Standard (SDTS)\(^7\), DIGEST\(^8\), the TIFF and GeoTIFF format and the more generic file formats HDF\(^9\) and netCDF\(^10\).

A special note should be made here at the interoperability standards from OGC, which has greatly enhanced the ability to exchange data in geolibraries since they have provided a common layer that allows data and metadata to be exchanged seamlessly.

Since the efforts of integrating geolibraries into current digital academic libraries are based on handling properly data descriptions (i.e. metadata), linking them together and providing a common metadata infrastructure and since we need geolibraries to also be available online then there a very close relation between geolibraries and current efforts of the semantic web. Semantic web can be seen as an effort to provide unified descriptions for any kind of data based on semantic structures with either soft or stricter rules that we usually call ontologies. Especially when we want to integrate metadata based on descriptions referring to different schemas then semantic web provides a unified way to store, update and query these metadata. Thus using semantic web advances seems like a well-suited choice, giving the geolibraries the ability to utilize an available (at various degrees) infrastructure and conceptual modelling primitives.

The Semantic Web gives us the ability to provide rich semantic organization for our geodata, allows the use and integration of different description schemas and different conceptual models and provides resource descriptions. But mainly it is valuable for the geolibraries since allows integration of different conceptual models based on the use of RDF/S\(^11\) at its base model for all. The RDF Schema defines the basic common concepts like classes, properties, sub- and super- classes and their relationships, including some simple rules. RDF is a framework, mostly a description language that allows for describing any kind of resources (Figure 2) like objects, literals, relationships, etc. All these are also based on our capability to provide unique URIs (Uniform Resource

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\(^6\) http://www.isotc211.org/
\(^7\) http://mcm.web.cr.usgs.gov/sdts/standard.html
\(^8\) https://www.dgiwg.org/digest/
\(^9\) http://en.wikipedia.org/wiki/Hierarchical_Data_Format
\(^10\) http://www.unidata.ucar.edu/software/netcdf/
\(^11\) http://www.w3.org/TR/rdf-concepts/
Identifier) that would allow distinguishing one object from another. Luckily this is not a problem in geolibraries since libraries in general provide unique ways to identify different items – one thing that is needed would probably be to extend that to cover geodata. Thus we can provide unique URIs for each item that can help us collect all the related information for this item to what we call a resource description (Figure 2).

Another interesting aspect and highly relevant in this discussion is the ability to navigate through the semantically described information regardless of its nature. In this area interesting efforts include the ability to provide semantic hyperlinks for moving from one area of the geolibrary to the other or use concept maps or topic maps to identify collections and relationships of items.

But what can one expect by integrating or at least bringing together geolibraries and the Semantic Web? One of the first gains would be the ability to extend information provided by the geolibrary by providing the capability to ask “smart” queries. This means that we can ask not only for keywords, authors or specific titles but we would be able to to connect information about the author, the place, the keywords, etc. We would also be able to to extend or restrict information based on the meaning it carries. For example one could consider places that are parts of other places, if you are looking related info on e.g. Chania, maps of Crete might be another source of information. This procedure becomes now automated and the inference should be done by the system exploiting the georeferenced information.

But some more steps are needed if we want to achieve a successful integration of geolibraries and the semantic web:

- We need to prepare ontologies to describe georeferenced information

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12 http://milicicvuk.com/blog/page/2/
We need to use semantic web tools and languages (SPARQL, RQL) to perform queries instead of databases and SQL.

And we need to provide prototype systems to evaluate actual deployment.

4. CONCLUSIONS
In this work we tried to establish the need for Geolibraries, either as independent entities or as integral parts of the existing academic libraries. These efforts are highly connected to the Digital Libraries and the Semantic Web initiatives and provide contributions to the standards that define the metadata that are being used. Extensions on existing schemas are needed in order to fully respond to whatever the Geolibraries’ world needs. Moreover we have discussed that current advances in the area of the semantic web can help provide an integrated and rich access to Geolibraries, adding information on both data and semantics and allowing the academic researcher to better understand where the georeferenced information refers.

These help us to better position the use of such data in the everyday library life by cataloguing them not just as items but also linking their spatial references to the rest of library resources providing not only thematic based catalogues but also spatially enabled catalogues. In that sense both concept based taxonomies of the Geoinformatics field but also geographic based ontologies (that define geographic entities) and library initiated cataloguing systems can be combined to catalogue, archive and retrieve the necessary items.

REFERENCES


Marketing tools to support university library’s mission

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Abstract: This paper is focused on the use of marketing tools in academic libraries based on an example of the Central Library (CL) of the Czech Technical University in Prague (CTU). An initial important marketing tool is the segmentation of the CL users into specific target groups and specification of their individual needs and requirements. The CL serves its students and academic staff, supports the development of their information literacy skills and assists to form their key competencies for their lifelong education, future profession and career. Marketing tools can be well used to support the evaluation of R&D activities. Besides this CL also helps to promote and increase the prestige of the university and its academic community as a whole. The paper describes a broad range of marketing activities including electronic tools and services that help the library to meet its goals.

Keywords: academic library, marketing tools, marketing mix, library services, information resources, R&D support, study support, value-added tools

Introduction

The Czech Technical University in Prague (CTU)¹ is one of the oldest technical universities in Central Europe and according to the QS World University Rankings the best technical university in the Czech Republic². The university has about 23 thousand Bachelor and Masters degree students and 3, 840 academic staff and PhD students (CTU, 2011). There are 8 faculties (Faculty of Civil Engineering, Faculty of Mechanical Engineering, Faculty of Electrical Engineering, Faculty of Nuclear Sciences and Physical Engineering, Faculty of Architecture, Faculty of Transportation Sciences, Faculty of Biomedical Engineering, Faculty of Information Technology), 3 higher education Institutes,
and 6 other constituent parts. All faculties and parts of the CTU closely cooperate to fulfill the university’s vision of openness, internationalization of educational programs, and strengthening of its information strategy.

The university has an inspiring environment, where students, faculty members and researchers gain their motivation to work and produce research results. The university library is an integral part of this academic body. Its position is defined in the organizational structure of the CTU, and its mission is driven by the traditional concept of an academic library as well as by new trends in library services that are generally in correspondence with the long-term development strategy of the CTU. The starting points are the cooperation within the university, cooperation with domestic and international university libraries, and creating of the potential to innovate the central library’s services. The library’s success and prestige is based on the ability of adapting itself to new conditions and needs. The mutual integrity of the library and the university is supported by the uniform university information system that simplifies the communication between the individual parts of the university.

The year 2009 was an important milestone for all faculty and institutional libraries. In this year, the Central Library (CL) of the CTU was founded as an independent part of the university aimed to provide an information support of educational, research and creative processes at CTU. For the library staff it meant establishing a new team, starting new activities, new style of work, and updating all marketing tools with respect to online information sharing, library services sharing, and sharing of electronic tools and services for the information support of educational and R&D activities at CTU. For the users, this change brought new library site, new library staff and new services and rules.

Mission statement

Prerequisite for providing high-quality information support is that all services are based on the needs and requirements of the university and are in accordance with strategic goals of educational and R&D processes development. The strategic plans of the library are based on the long-term strategy of the university. The marketing vision of CL is that the library becomes an important and highly valued place, which keeps and strengthens its position within and outside the university by providing high quality information and tools for further work with the scientific information (communication, sharing of information and knowledge, management of research results).

To keep up with the market environment the library has to be aware the key characteristic of its surroundings. The library should realize all its possibilities (not only financial) and know what (products and services) and for whom are they essential. The library continuously conducts various inquiries, investigations, workshops, etc. Very helpful was a survey on citation behaviour,

\[^3\] [http://www.cvut.cz/informace-pro-absolventy/dz only Czech version]

\[^4\] [http://knihovna.cvut.cz/home/]

citation ethics, or evaluation of our courses for PhD students which brought important information regarding the knowledge and information needs of our users, CTU students. Also analytical tools assessing the access to websites and to electronic information resources are a valuable source of information about the library users habits. Thanks to all these tools the library can evaluate which sections of the websites, which services and tools are the most visited.

**User segmentation**

From the marketing point of view it is essential to conduct an analysis of current services first. Before thinking of implementing new services, it is necessary to solve strategic problems regarding the Segmentation of users, Targeting and Positioning of these services (1999).

As an academic library of the CTU, CL has the advantage of knowing its users quite well. In terms of segmenting the services, it is essential to divide the users into the following groups:

- Bachelor and Master students
- PhD students
- Academic staff (faculty)
- Researchers

All library services are then targeted at a particular user group. For bachelor and master students the library provides library tours, information meetings for new (first year) students, recommendations how to write papers and theses, how to cite. Also, such topics as plagiarism, copyright law, and research ethics are covered. For PhD students there are further events as for example one-semester courses for PhD students, and many seminars and presentations covering advanced retrieval methods in databases. For better communication with the user group, an e-mail conference DSVinfo (mainly for PhD students) was established.

Services and tools provided for the faculty and researchers should support information provision for study and research at the CTU and presentation of the research results. One of the possible ways is to promote Open Access initiatives including building the institutional repository and defining OA policy within the university. The CL as a place for synergy of university and library fulfills the meaning of the Greek expression syn-ergazomai (co-operate).

Based on user feedback and analyses of the users’ needs, the library tries to provide the best and most efficient services supporting creative educational and research university environment, and to bring such information environment, that the user is fully satisfied and does not seek services at competitors.
Marketing mix 4P
After evaluation of the initial conditions for introducing a new service or analyzing current service the next step is to apply ‘Marketing mix 4P’ - Product, Price, Place, Promotion (Kotler, P. et al., 2009).

Product
The policy of creating a portfolio of online services of CL results from an idea of interconnecting current CL services and adding value rather than independent tools. The new way of use of current services, updating and renovating of information technologies supports the data mining from databases, fast and open presentation of research results, and accessibility of publication outputs at the university. It is a dynamic system based on the requirements which enables innovations of current services and creating new value-added tools. From the marketing point of view, these value-added tools and services help to promote the library collections, services and electronic information resources.

Price
All services are provided to the user for free, i.e. are financed from the library budget. To survive in the competition, the library has to be well informed about the environment. For taking the important decision the CL strategic plan is fundamental. In the area of information support of research and education the plan is built upon the pillars of quality and relevance, upon synergy of resources and effectiveness of financing. It is in accordance with strategic plans of the university and results from the integrity of the university and from respecting common concerns in the university development, from the needs and requirements of the academic community – library users. By creating and setting tools and services for the support of sharing of electronic information resources for educational and research areas not only within the university, but also by setting a cooperation with other technical universities, it is possible to reach maximal effectiveness and efficiency in using available financial resources and in the accessibility of relevant information resources.

Place
The services of the CL are available for the users in the online environment. To use online resources there is no need to register in the library. It may however do require the user to use university user authorization.

Promotion
Regarding this product policy, we have been implementing such marketing tools, that the CL uses to promote its electronic information resources, implementation of modern information technologies, and building a space for online information sharing. Innovation of cooperating system of electronic
services and tools that the library has been focusing on is based on and influenced by feedback from the library users.

**Product and strategy example**

1. **E-books**

   E-books are very popular types of documents that are available for the users for 24/7. CTU provides access to particular collections of Knovel library, ebrary as well as to individual e-book titles of the scientific publishers Elsevier, Wiley and Springer. In the past years the CL also provided access to Safari e-book collection.

   **E-books promotion**

   In the past, the CTU users had access to Safari e-book collection, where the number of available full text titles was limited to 30 at a time and was changing every month. Therefore a polling tool was created to vote for titles to be available for every next month. The value of the vote was depended on the user status (student/employee). Every user could vote for one particular title only once. This was a great communication tool which reflected the information needs and requirements of the users and gave the librarians a great feedback of the users’ needs.

   The idea of polling was re-used in newly created polling application for user-centered book acquisition tool.

2. **Electronic information resources**

   The CTU has access to a number of prestigious electronic resources for science and technical disciplines such as IEEE/IET Electronic Library, ACM Digital Library, e-journal collections of scientific publishers Elsevier, Wiley, and Springer, or as citation databases Web of Science and Scopus.

   **Electronic resources promotion**

   ‘Serials Solutions’ is a complex solution for the management and organization of all electronic resources available in the CL. It includes integrated tools and services for centered and unified information retrieval and document access from one place all at one time. Because of a large number of databases available at CTU there was a need to simplify the work with them and to provide more user-friendly environment. The metasearch engine ‘360Search’\(^5\) is aimed at lowering barriers in finding relevant documents. The user is being informed about the number of relevant links, about the database in which the document is available and the availability of full text. Pre-test done in the beginning of the PhD courses showed, that the students are familiar with the tool and have been using it to search for information.

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Citation manager RefWorks\(^6\) is being provided since 2007 and was originally purchased based on results of a survey regarding citing. It is a value-added tool for data mining from available electronic information resources and for reference management and organization. Its module RefShare is being used by the CL as a tool for communication with users, and to distribute and to promote news from the library collection.

‘News in the CTU research field’ is a new service providing the users with the information of newly published documents from particular research field in databases. It is based on web 2.0 tools (RSS feeds). The goal of this service is to offer a new channel for information sharing, for promoting new publications and for promoting information resources to a specific target group according to their specialization (Records are available only to users with CTU authorization).

3. Scholarly communication

The future development of university libraries will into a high extent rely upon the development of the university in the areas of R&D. Already today, the results in this area have both, direct and indirect impacts on the position of the CTU in terms of quantitative comparison with other universities (according to the world university rankings). Further impacts are also in the area of financing, i.e. with direct impact on the library, which is financed by the university. The library puts high emphasis on the information support of research and development at CTU in the area of information support of individual research areas, by tracking new core research areas and their coverage in available information resources. The CL also wants to participate in the process of improving young researchers’ information literacy. The library wants to support the openness of the university by promoting Open Access (OA) policy. CL actively participates in the promotion of OA ideas, it tries to increase the knowledge about OA, prepares and promotes OA events, supports and encourages authors to be concerned about their author rights and to keep their author rights after publishing an article. CL also supports the OA to published R&D results.

Scholarly communication promotion

Institutional repository\(^7\) is a unified university platform which aims to save, keep, share and communicate publication outputs published by CTU authors. It is being built within all principles of openness of the university towards the domestic and international environment, to increase the transparency of educational and research activities and to share knowledge and outputs of research activities both within and outside the university community.

\(^6\) http://www.refworks.com/

\(^7\) https://dspace.cvut.cz/
COS Research Support Suite is a unique commercial tool to support the research and development activities at the university. It is composed of three sub-products: COS Scholar Universe\(^8\), COS Funding Opportunities\(^9\), Papers Invited\(^{10}\). It is not a typical social network, but rather a platform which eventually supports the establishment of social networks. This service provides verified information about the scientific community, their research projects, publications, up-to-date grant and funding opportunities, and also an up-to-date list of conference calls for papers. Researchers are provided with an individual space to present their work and to find new contacts and establish new research teams.

Using RSS feeds the CL constantly releases records about the publication outputs by CTU authors from the WoS a Scopus databases on its website (Records are available only to users with CTU authorization).

4. Information education

The library organizes a number of regular and irregular events regarding information education that shall contribute to improvement of students’ and researchers’ information literacy.

The CL website has become one of the main communication, marketing and promotion tools of the library. Thanks to the unlimited space for its presentation, the CL can widen its services targeted according to its users’ needs. The CL can promote itself efficiently and guide the users through the website towards their desired and relevant information. This is usually the first place which the user visits before getting registered in the library.

Social network like Facebook\(^{11}\) enables informal communication with users about new services, events like trainings or seminars. It also provides the possibility to connect itself with the other parts of the university.

Among further highly used communication channels are used various brochures, flyers, posters, as well as publishing of these information on the university and individual faculties’ website.

Conclusions

Shall the library become a top institution in terms of the support of educational and research process at the university it must have the knowledge and ability to offer and promote tools and services and to support their use. CL respects these

\(^8\) http://www.scholaruniverse.com/
\(^9\) http://fundingopps.cos.com/
\(^{10}\) http://search.proquest.com/papersinvited
\(^{11}\) http://www.facebook.com/knihovnacvut?v=wall
marketing principles: segmentation of user groups, targeting the services on the identified group, analysing user needs, and good timing of promotion. Thanks to following the above mentioned principles the library is able to provide new services, and to increase the use of current tools and resources. The CL shall also act as a guide in the time of their implementation and try to interconnect them with university environment (e.g. university information system).

With limited CL staff capacity, the online support of users is a starting point while implementing new services, above all the services which are focused on the increase of information literacy of students of all levels, and at the qualitative and quantitative increase of research output at the university.

The university library as a part of an academic community depends on the decisions of the university management that are in sometimes limiting. Therefore the library should observe new trends, gather documents and information for the university management, analyze users’ needs, actively offer support and new solutions and thus continuously prove its unique role in the university environment.

References


CONTEMPORARY TENDENCES IN SERBIAN ACADEMIC LIBRARIANSHIP WITH SPECIAL EMPHASIS ON CATALOGUING AND CLASSIFYING LIBRARY MATERIALS

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The „Svetozar Marković“ University Library
Belgrade, Republic of Serbia

Abstract: Academic librarianship of Serbia is being developed gradually. Followed by many problems which are permanently present, it recognizes its’ interests in the modern scientific and technical environment. This librarianship is oriented towards its’ users e.g. internal and external readers. Although marketing is indispensable, it is being implemented just from time to time without an accurate strategy which would be followed by some alternative solutions in the academic libraries of Serbia.

Normative acts determine the tasks of libraries, their departments and the employed very clearly. However, the implementation of marketing orientation would be very usefull in all the segments of library activity. Although all the academic libraries do not have identical dimensions, tasks and users, marketing as an orientation would promote their service quality. It is possible to realize sustainable development in the field of librarianship and informatics if focusing on the end user exists as a permanent orientation.

There is a strong tendency in the academic librarianship of Serbia to respect and implement internationally accepted standards. Librarians follow the activities of ISO. Technical bases of work are being adjusted to world standards. Modern tendencies impose the creation of institutional repositories in the context of present technical, financial and space conditions. Library staff relies on professional system of training particularly in the field of cataloguing and classifying monographies, periodicals and articles.

Information literacy becomes a precondition of an intellectual freedom. The number of PC-s in households increased remarkably from 2001 until today. It is not amazing because the prices of PC-s on the market decreased and the quality of this equipment increased. New generations of PC-s are the object of sale in the department stores of technical goods. Globalising is intensified. It includes individuals and institutions in almost all professional fields.

Librarians, associations of libraries as well as academic journals point out the indispensability of developing information literacy, electronic resources and digital libraries. The role of the National Library of Serbia stays extremely important for the improvement of collaboration among academic librarians and for the promotion of professional work. An electronic catalogue is the face of each library towards the world.
Therefore this paper will point out the actual situation in cataloguing and classifying library materials in Serbian academic environment.

**Key words:** academic librarianship, Serbia, cataloguing, classifying, library materials.

**Introduction**

The academic librarianship in Serbia is being adjusted to modern streams in world librarianship. The position of an academic librarian is being changed in technical context of his profession. Marketing terminology is not accepted in the practice of the academic librarianship in Serbia. Possible exemptions exist. Generally speaking, academic librarians follow contemporary tendencies in technical progress.

It is in the field of cataloguing and classifying library materials that academic librarians and their colleagues who work in the libraries included into the VLS (Virtual Library of Serbia) follow regularly the changes which refer to the international standards and their implementation.

**Technical conditions and dilemmas**

The process of standardized cataloguing and classifying library materials is included into the process of development in the academic librarianship of Serbia having in mind the fact that an electronic catalogue is the face of a library towards the world. The Virtual Library of Serbia has a very important role in all professional retrievals carried out by library staff or the users themselves. E-catalogues are in free access. Therefore, users are in a favourable position because they have an on-line access towards cumulative e-catalogue.

While warehousing was being one of the key characteristics for a Library 1.0, in a Library 2.0 readers are focused on the use of technical equipment tending to search efficiently all indispensable e-resources. So, it is in different types of libraries that paper catalogues are being replaced by the electronic ones. However readers use also Web 2.0 space in order to create useful contents. In addition they contact those librarians with whom they can realize successful dialogue on an academic level. Each library tends to increase the number of users through the improvement of its’ own production mix e.g. collections (monographies, periodicals, non-book materials), programs and services as well.

The 21st century is an era of animations, cultural changes and their penetration into households and professional environment as well. Focus groups of an academic library will stay longer in those segments of the Information Society where professional creativity will be more emphasized. A contemporary library includes 3D services. Although Library 3.0 is not strictly defined, it can be said that it implies multidimensional orientation in an
electronic environment. Paper catalogues will also exist in such a library. Librarians will develop communication with internal and external users. Marketing services will keep their importance. A professional access to users will always be of great importance. “People will collect librarians rather than books – the ability not just to organise, but also to annotate and compare books and other information sources, from a variety of useful perspectives.”

Such a description of a progressive library – Library 3.0 would be particularly adequate for an academic library if its’ marketing orientation would be clearly expressed in development documents. Academic libraries of Serbia didn’t reach that level yet. It is in an electronic city that libraries point out a professional and many-sided work with users taking into account a permanent growth of information as well as great wealth of contents that may be found searching Internet.

The position of an academic librarian

There is a strong intellectual diversity among librarians in a university library having in mind different focus groups. Such a diversity doesn’t exist in an academic library which belongs to a faculty or an academy, for example. Librarians collaborate among themselves within the Virtual Library of Serbia and pass through an unavoidable process of trainings particularly in the field of cataloguing and classifying library materials.

Academic librarians accept different forms of permanent education such as: attending training courses, workshops, seminars, conferences, attending postgraduate studies at different faculties, visiting book fairs, etc. The academic librarians are usually more integrated into their professional field than librarians in public libraries but it needn’t be the rule. The users rely on academic librarians’ professional experience when they have to make retrievals in order to find resources for their papers. As library sites are usually interactive, e-consulting is also possible.

E-resources in the academic libraries of Serbia

It is on its’ site that IFLA published the Statement on Libraries and Sustainable Development. Reading this statement it becomes crystal clear that “library and information services provide essential support for lifelong learning, independant decision-making and cultural development for all. Through their vast collections and variety of media, they offer guidance and learning opportunities. Library and information services help people improve educational and social skills, indispensable in an information society and for sustained participation in democracy. Libraries further reading habits, information literacy and promote education, public awareness and training”.

Consortium of Serbian Libraries for Coordinated Acquisition (KOBSON e.g. Konzorcijum biblioteka Srbije za objedinjenu nabavku) has a very important role for the access of library users to academic and scientific journals. Thanks to this consortium users may access more than 35,000 foreign
scientific journals in an electronic or paper form. The consortium tends to increase that number.

This consortium includes into its’ offer many journals which are being offered by Web of Science. Such an e-service as Web of Science (WoS) is, includes many important journals in all scientific fields. It is illustrated by the following statistical data:

Journals from WoS offered by KOBSON to the library users in academic Serbia

<table>
<thead>
<tr>
<th></th>
<th>WoS</th>
<th>KOBSON</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social sciences</td>
<td>1354</td>
<td>1087</td>
<td>80.28</td>
</tr>
<tr>
<td>Humanities</td>
<td>46</td>
<td>39</td>
<td>84.78</td>
</tr>
<tr>
<td>Engineering and technology</td>
<td>1065</td>
<td>727</td>
<td>68.26</td>
</tr>
<tr>
<td>Medical sciences</td>
<td>2088</td>
<td>1451</td>
<td>69.49</td>
</tr>
<tr>
<td>Agricultural sciences</td>
<td>355</td>
<td>231</td>
<td>65.07</td>
</tr>
<tr>
<td>Natural sciences</td>
<td>3148</td>
<td>2125</td>
<td>67.50</td>
</tr>
</tbody>
</table>

Resource: [www.nb.rs](http://www.nb.rs) (3)

It is thanks to the same consortium (KOBSON) that users may search the collection of e-books. This electronic service offers more that 60,000 titles. Users may carry out their retrievals on the basis of:

- ISBN number,
- title,
- the name of an author or
- the editing house.

The „Svetozar Marković“ University Library in Belgrade has strong influence on academic librarianship in Serbia because it was being central university library in Serbia during long period. The work of this library is gradually being changed in accordance with new Law on Library and Information Activity of The Republic of Serbia (4).

As far as the project PHAIDRA is concerned the „Svetozar Marković“ University Library relies on the experience of the University of Vienna. PHAIDRA means Permanent Hosting, Archiving and Indexing of Digital Resources and Assets at the University of Vienna. „As a constant data pool for administration, research and teaching, Phaidra enables long-term management of digital data, a flexible use of resources, location and retrieval of prepared digital objects – via continual citability – that are appropriately structured in particular through the use of a metadata design, developed by an interdisciplinary working group of the University of Vienna“ (5).

The „Svetozar Marković“ University Library tends to create a digital repository which would include doctoral dissertations in full text by the authors who were attending doctoral studies in Serbia. This process is not easy. It
implies that copyrights are to be understood and respected. Future retrievals will show us whether some other materials would also be downloaded into the digital repository having in mind the needs of administrative staff, researchers, students and personnel whose main role is to teach.

New materials in the digital repository of The „Svetozar Marković“ University Library include:

- oriental middle-aged manuscripts
- Christensen’s collection
- cyrillic manuscripts from the middle-aged period and
- rare printed books (6).

Of course, these materials are in an electronic form and in free access. Christensen’s collection is one of the legacies in The „Svetozar Marković“ University Library. This institution contains precious oriental, cyrillic manuscripts and rare printed books from the middle-aged period in its’ collections.

Europeana.eu is a European digital library, museum and archive which offers 20 millions books, photos, paintings, films, sound documents and archive materials digitized by the institutions which go in for cultural heritage from all the countries of Europe.

The National Library of Serbia participates in the project „Collections Europeana 1914-1918“ (7). It is thanks to this participation that the public will become familiar with Serbian historical and artistic documents from the First World War which will be presented on the portal of Europeana.eu (8).

After all, we should have in mind Ranganathan’s five laws:

1. Books are for use.
2. Every reader his (or her) book.
4. Save the time of the reader.
5. The library is a growing organism. (9)

Library staff is to focus on the end user according to marketing for librarians. However, Ranganathan’s five laws are still actual. An impression is being imposed that his traditional attitudes are in the very core of marketing philosophy. Such a philosophy should be implemented in order to disseminate scientific information more efficiently to library users in an academic environment today.

Obligatory copy

It is according to the new Law on obligatory copy of publications that editing houses (not printing-houses as earlier) have to submit five compulsory copies to the National Library of Serbia no matter whether the
work is published in Serbia or abroad (10). This new law is being implemented from 24 October 2011. Except this, it is also new that there is an obligation to submit a compulsory e-copy of a printed work. Such copies will be allowed to use only at PC-s in depository libraries (such as The National Library of Serbia and The Matica Srpska Library). It will not be possible to copy and distribute such e-versions. Publications are to be submitted in PDF format (11).

Cataloguing and classifying library materials

Library users may receive a real picture of library collections through searching its’ e-catalogues. It is in each university library that great inflow of monographies, serials, library materials in general is to be expected. Preconditions for creating a professional academic electronic catalogue include: contemporary technical equipment, qualified library staff with an adequate level of linguistic culture, good organization of work and permanent trainings of library personnel. Instructors for cataloguing library materials are to be well prepared and reliable. The National Library of Serbia realizes regularly such trainings of librarians from academic libraries.

Academic librarians in Serbia work mostly in accordance with international standards for bibliographic description of library materials. Technical conditions allow them to catalogue and classify in such a way. Librarians in academic libraries – members of the Virtual Library of Serbia, mostly use software equipment COBISS 2 for cataloguing library materials. New services for academic users are being created thanks to COBISS 3 which improves work in the field of:

- stocks management,
- the acquisition of library materials,
- loan service and interlibrarian loan service,
- system management (12).

High quality library output in the form of bibliographic description implies an input (monography, journal, CD, DVD...etc.) which is in accordance with the acquisition policy of the library itself (13). The acquisition policy depends on the type of the library and its’ professional orientation. Academic libraries in Serbia use mostly the UDC (Universal Decimal Classification) in the process of cataloguing library materials.

Library users may retrieve an academic e-catalogue using UDC number and carrying out an expert retrieval in this way. Usually, users search e-catalogues relying on the name of an author, the title of a bibliographic unit, or simply using key words.

It is thanks to technical conditions that librarians may follow their quantitative results in cataloguing and classifying foreign books, monographies as a compulsory copy (text books, academic books, doctoral dissertations, master thesis), articles. The quality is achieved thanks to the fact that librarians have technical conditions for the implementation of the international standards. Bibliographic descriptions of monographies, for example, cannot be
downloaded unless all indispensable fields and subfields are filled in by librarians in the Virtual Library of Serbia. It is the same case with bibliographic descriptions of articles published in academic journals. Each bibliographic description downloaded in the database receives an ID e.g. identification number. There shouldn’t be two ID numbers for the same bibliographic unit in the cumulative e-catalogue (The Virtual Library of Serbia).

The history of bibliographic control is the history of formulating, accepting and implementing standards as well as their changements (14).

Academic librarians of Serbia have a possibility to participate in the creation of the Bibliography of Researchers. E-CRIS.SR (Electronic Current Research Information System in Serbia) includes data on:

- 191 research organizations,
- 476 departments of organizations,
- 9750 researchers,
- 0 projects.

When a bibliographic unit is being catalogued, an author who is a researcher as well, receives his numerical sign according which a librarian includes the year of birth as a data into the bibliographic description. The numerical sign helps the librarian to find out the name of an institution the researcher works for. It is in such a way that data on researchers become more accurate. It is the matter of professional ethics and standards, as well. E-CRIS is in free access. It is still in the experimental phase of implementation. (15)

**Conclusion**

It is in the era of animations and cultural changements that the academic libraries of Serbia are getting prepared for the Society 2.0 although 3D society and its’ consequences are known to professional staff mostly through printed and e-resources. The academic librarians will continue to collaborate among themselves in order to promote their professional knowledge and exchange experience. The National Library of Serbia will keep its’ key role in training librarians for further technical challenges.

The Consortium of Serbian Libraries for Coordinated Acquisition makes the retrievals of aggregated databases possible for academic library users. They may access more than 35,000 foreign scientific journals either in a paper or in an e-form. There is a tendency to increase the number of journals users may access.

Digital repositories are being created gradually. There is a strong tendency to use contemporary technologies in order to transfer original middle-aged manuscripts into an e-form and keep cultural heritage actual and accessive for many readers.

The cataloguing and classifying library materials are based on internationally accepted standards. These activities are being carried out in a
contemporary technical framework. The academic librarians of Serbia have a possibility to catalogue and classify serials analytically and participate therefore in the creation of the Bibliography of Researchers. It can be an efficient way to confirm their professional orientation towards the promotion of Serbian academic librarianship.

References:

2. [www.ifla.org](http://www.ifla.org) (Read on 28 January 2012)
3. [www.nb.rs](http://www.nb.rs) (Read on 26 January 2012)
4. „Official Herald RS“, no. 52/11, 15 July 2011 (Serbian)
5. phaidra.univie.ac.at (Read on 2 February 2012)
6. [www.unilib.bg.ac.rs](http://www.unilib.bg.ac.rs) (Read on 6 February 2012)
7. [www.nb.rs](http://www.nb.rs) (Read on 26 January 2012)
8. Europeana.eu (Read on 27 January 2012)
10. „Official Herald RS“ no. 52/2011 (Serbian)
11. [www.nb.rs](http://www.nb.rs) (Read on 3 February 2012)
12. Bogoljub Mazić, New Library Services at Western Balkan Universities, Tempus project 2009, Belgrade, The „Svetozar Marković“ University Library, Power Point presentation, slide no. 11. (Serbian) [www.westbulnet.com](http://www.westbulnet.com) (Read on 4 February 2012)
15. [e-criss sr.cobiss.net](http://e-criss sr.cobiss.net) (Read on 6 February 2012)
ASSESSMENT OF INFORMATION LITERACY COURSES FOR PHD STUDENTS

Angela Repanovici, Transilvania University of Brasov, Romania
Manolis Koukourakis, University of Crete Library, Greece

Abstract: Information literacy courses for PhD students have to be designed with new requirement of information technology. One survey was developed to doctoral school at Transilvania university of Brasov and PhD students of University Library of Crete. It was focused on information literacy and needs of PhD students, current practices and strategies on: Finding resources for your literature review and beyond, Good academic practice when writing your thesis, The databases that help you choose where to publish, Citation searching, Measuring and Improving your research impact with bibliometrics. It will be present survey results, comparison between the two institutions and one model of curricula for information literacy course for doctoral students. Key words: information literacy, PhD students, citations, bibliometric, copyright.

1. INTRODUCTION

The information quality is concerning us all, especially those in academic environment. The information quantity available to us creates a complex framework of access and use in the informational society. We have tools to retrieve information, the internet as an extraordinary environment of communicating information, search and retrieval engines and tools for publications classification.

The use of web information becomes an increasingly used practice. There are more and more available sources and their access easier. Gils proposes a model of information quality “based on the observations that objects (dubbed artefacts in our work) can play different roles (i.e., perform different functions). An artefact can be of high quality in one role but of poor quality in another. Even more, the notion of quality is highly personal.” (van Gils, 2007)

Various definitions exist for the term information quality (Eppler, 2006). They use different criteria for good quality of information such as completeness, accessibility, accuracy, precision, objectivity, consistency, relevancy, timeliness, and comprehensibility. Some studies measured the quality of information in several databases in terms of data-availability (Voigt, 2006) or satisfaction level for search results. (Brünger-Weilandt, 2011)
In information society, researchers have at their disposal new technologies and services that allow them to discover, locate, gain access to and create information resources on their desktops. However, there is evidence that research information skills have not kept up with the rapid change in this area. This raises important questions about how researchers acquire the appropriate skills in information handling, and the take-up of the training opportunities provided. Information literacy concepts have to be harmonic with this level of research. PhD students are the future researchers and they need special skills to be successful in information explosion and information technology developing. The report *Mind the skills gap: Information-handling training for researchers* (Pilerot, 2011) concludes that training for researchers on information seeking and management is uncoordinated and generally not based on any systematic assessment of needs. The report focuses on the information-related training for researchers that is provided by universities and other higher education institutions. It looks at the roles that librarians and other specialists play and how the training that they provide it with the wider training provision. As an example, Wageningen Graduate Schools from United States of America organised Information Literacy courses to PhD students and post-doc researchers of Wageningen UR and organised by the Wageningen UR Library. It covers the following topics: Effective use of UR Digital Library, including My Library, bibliographic databases on different platforms, portals, electronic journals, etcetera, Getting to know the different types of scientific information sources: when to use what, How to select proper information sources for your research, Introduction to Citation Search and getting acquainted with Impact Factors of journals, Individual instruction and help in developing a balanced search plan, that will be beneficial throughout your PhD period.

“PhD students can be said to have the same, if not a greater, need to be information literate as any other university student. But there is one information related aspect that seems to be of a greater importance for PhD students: the ability to handle large amounts of research information is of particular importance for this group of students. Their studies are often taking place over a long period of time and they tend to penetrate their subjects thoroughly, hence they are subjected to and collect large amounts of information. The majority of the students participating in the course indicated that it is very important to be able to organize and develop rational ways for easy and quick access to information.” (Research Information Network, 2009). Information management for knowledge creation, information management for PhD-candidates, is one project developed by University of Bergen, Norway in collaboration with Bergen University College, Norwegian School of Economics and Business Administration, University of Oslo Library, University of Aalborg Library- [http://inma.b.uib.no/](http://inma.b.uib.no/) . The aim of the project is to develop information literacy education modules for PhD students. The modules will be tailored to this target group by taking into account their information searching behaviour and information needs, as documented in the existing literature and as revealed by the project own findings. The modules will contain open access online resources
and teaching portfolios for seminars within PhD programmed. The project will be run as collaboration between five Nordic academic libraries. (Information management for knowledge creation, 2010)

2. CASE STUDY AT TRASILVANIA UNIVERSITY OF BRASOV VERSUS CRETE UNIVERSITY LIBRARY
2.1 Transilvania University

Transilvania University developed an information skills program integrated into the first year engineering subject "Documentation techniques". As a problem based learning subject it requires the students to work through and report on an engineering project. Over the past four years the program has transformed radically as a result of applying an action research framework which is primarily concerned with continual improvement and change in practice. Currently the information skills program consists of a student-led orientation tour, an integrated subject web page (developed using RESEARCH AND WRITE tutorial). The students are provided in their curricula with the Information Literacy course including the following specific accumulated competencies:

<table>
<thead>
<tr>
<th>Professional competencies</th>
<th>Transversal skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1: Determine the extent of information needed.</td>
<td>CT1 Solving in a realistic way – both by theoretical and practical argumentation – of some usual professional situations, in order to accomplish their effective and deontological solution</td>
</tr>
<tr>
<td>C2: Access the needed information effectively and efficiently.</td>
<td>CT2 Applying effective intellectual activities techniques in a multidisciplinary team</td>
</tr>
<tr>
<td>C3: Evaluate information and its sources critically.</td>
<td>CT3 Self-evaluation of professional training need in order to insert and adjust to the labour market requirements</td>
</tr>
<tr>
<td>C4: Incorporate selected information into one's knowledge base.</td>
<td></td>
</tr>
<tr>
<td>C5: Use information effectively to accomplish a specific purpose.</td>
<td></td>
</tr>
<tr>
<td>C6: Understand the economic, legal and social issues surrounding the use of information.</td>
<td></td>
</tr>
<tr>
<td>C7: Access and use information ethically and legally.</td>
<td></td>
</tr>
</tbody>
</table>
1 General objective of the course

The purpose of Information Literacy course is to enhance students' ability to locate, gather and evaluate information in any format. Overall objectives are to support the university curricula and participate in the academic communication process to promote lifelong learning skills and continuous educational achievement.

General skills concerning information culture - information literacy – are structured upon 3 components: information access, assessment and use.

Within the course the students will gain the specific competencies required by the documentation activity and then to communicate the scientific information.

2 Specific objectives

After completing this course, students should be able to:

1. Formulate a research strategy to find information about a selected topic.
2. Find materials in the online catalogue and obtain them for use.
3. Search library online databases for articles and information.
4. Use search engines and directories to find information on the World Wide Web.
5. Evaluate information sources for accuracy, authority, objectivity, purpose, currency, and appropriateness.
6. Demonstrate a basic understanding of plagiarism and copyright as applied to the research process.
7. Read and write citations using APA, MLA, Turabian, Harvard, ISO or others documentation styles.

2.2 University of Crete

University of Crete Library has developed, with regard to Information Literacy, a comprehensive and integrated approach that includes all library facilities, tools and services, extending from library premises to electronic tools design. It employs a multifaceted strategy that involves all UOC agents, in an effort to
help users achieve information literacy, as a life-long process of turning information into knowledge.

In this conception, the library is a lively cell in the heart of the university: a place to meet, to search and study and to find help and instruction in study and research. At the same time we have made every effort to ensure that our electronic resources will be available to our registered users from everywhere (library premises, campus or home) on a 24/7 basis.

**Critical mass of available scientific information**

Together with academic quality, we consider the critical mass of available information resources also a crucial factor for study and research in a university environment. We have tried to create comprehensive, specialized collections in the fields covered within the university. Specifically regarding e-resources, a key factor in coping with the costs necessary to cover the increasing need for quality information sources lies in networking, cooperating and sharing. UOC Library is one of the founding members of the Hellenic Academic Libraries Network (HEAL-link). A big part of our subscriptions is done through consortia agreements within the frame of HEAL-link, while the rest of our users needs are covered with bilateral agreements.

**Support and promotion of Open Access**

On the other hand, we have also directed our efforts in the promotion and support of Open Access initiatives, both to the support of the academic work produced within the university, as well as to making widely available material of the library holdings through digitization. The library has been acknowledged as the proper place to deposit, administer, preserve and disseminate all the scientific work produced within the University, for which it operates an institutional repository since 1998. The library has also taken serious action in the field of digitization of the rare and valuable material of its Closed Collections, which it makes available online through ANEMI Digital Library of Modern Greek Studies.

**Electronic tools and facilities**

Our main effort is to provide to our users «one stop» WEB site pages, so that, although the various electronic tools that provide access to our material perfectly operate as self-sufficient points of access to their specific content, they also integrate with the other tools. We try to achieve the most possible cross-platform integration and interoperability by making wide use of broadly accepted metadata as well as interoperability standards. Through Library’s web site, our users have access to the Library OPAC, E-journals catalog, Dbs catalog, Elocus Institutional repository, ANEMI Digital Library of Modern Greek Studies, Course Reserves, E-learning platform. Our users also have full access to Zephyr virtual union catalog of Greek academic libraries (a portal created, maintained and hosted by our Library), HEAL-Link e-resources catalog and the Collective Catalog of Journals in Greek Research Libraries. The Open
URL resolver we are using allows integration with the vast majority of our providers’ sites, while we have also developed, using open source tools, Livesearch meta-search portal, which enables a cumulative, federated and faceted search for all our resources.

Collaboration with Faculty
We try to collaborate as close as possible with our faculty members, both on a departmental and on a personal basis, for the selection of relevant material. We also try to broaden the awareness and deepen the knowledge of the available library resources among faculty members, and count on the cooperation and feedback we receive from faculty members that are frequent library users. We also take under serious consideration the needs and suggestions of our graduate students, who make heavy use of the library resources for their research, projects and theses. Graduate students, due to their advanced research needs and in combination with their adaptivity to new tools, resources and services, also act as a means to (further) activate their professors.

Course Reading lists
In addition to Course Reserves, we also catalog in our LIS the Course Reading lists provided by the faculty staff, a service very useful to our students, since it makes available topic-specific bibliographies regarding courses, seminars and training classes which can be searched/browsed by semester, department, course title/code, teacher's name, etc.

User Instruction
The main user groups to which we provide formally organized training and instructions are undergraduate and graduate students. Our orientation course, which is a prerequisite to activate students’ loan rights, mainly focuses on the use of library and its OPAC. We also hold throughout the year scheduled courses on the use of library’s electronic tools and information sources, and scheduled databases tutorials which are in fact training sessions for students focused on comprehensive databases. Throughout the semesters the library, in co-operation with faculty members, offers on-demand, content-focused tutorials, which usually are 1-3 hours courses within the curricula.

Electronic dissemination
Apart from the announcements we publish in our web site, we also send electronic messages to faculties through their all-users lists, as well as faculty-specific messages. To promote and encourage the use of our information resources we also send replies with specific links and suggestions for the material required by the faculty staff, while we also encourage all our users to make use of the various alert and awareness services available either through our own tools or by our providers themselves.

Training material
We provide a wide variety of printed material (flyers, leaflets, quick reference
guides), homemade or made available by the various providers. All the print instructive material we create is also available in electronic format from our website. We have also established an e-learning platform and in this pilot phase we are creating an online version of the library orientation course, and a course on our e-resources and tools.

**To be done**

As following steps, we feel we have to work with the university administration and the faculties in order to formally establish a course on information literacy either as a separate, core course in the curricula (adapted for different faculties), or one 2-3 hours core session within each course. At the same time we have to develop subject-focused, interactive training material, which will be available through our e-learning platform. (Koukourakis, 2009)

### 2.3 Data Analyses

**Romania**

We surveyed doctoral school PhD candidates from Transilvania University of Brasov- UTBV. Our data were collected in the first semester of 2012, during 2 weeks. We used one electronic survey, using the free tools site: [https://www.surveymonkey.com](https://www.surveymonkey.com). The survey was called: *Scientific information evaluation*. We sent invitations for this study on their entire discussion list. The sample was validated from the point of view of women-men proportion and from the point of view of the respondents’ proportion in distribution of year of doctoral school stage and distribution on PhD field research.

**Greece**

We surveyed PhD candidates from Crete University (Faculties of Letters, Social Sciences and Technological Sciences & Engineering). Our data were collected in the first semester of 2012, during 2 weeks. We used one electronic survey, using this free tools site: [http://www.surveymonkey.com/s/FDLHHXF](http://www.surveymonkey.com/s/FDLHHXF). The survey was called: *Αξιολόγηση της επιστημονικής πληροφόρησης*.

#### 2.3.1 Methods

Our survey contained two distinctive parts: information literacy and a scientometric elements part. The scientometric elements survey made use of a Likert scale.

The model and criteria of information quality assessment were based upon the matrix in figure 1.
The fields in which the Transilvania university owns the skills of doctoral school development are: Engineering, Economical Sciences, Sports and Education, Medicine and Literature. The most respondents, 74%, belong to engineering field, which is a traditional domain within Transilvania University.

Most responses at University of Crete came from the Faculty of Literature (52.%), and the Faculty of economical science (45%) the two oldest Faculties of medicine ( 5%), with outstanding tradition in student education and research. ( Figure 2 )

**Fig. 1: Information quality assessment model**

**Fig.2: Topics of thesis**
Referring to gender situation in Romanian case 56% are masculine and 44% feminine and in Greece case 59% are masculine and 41% feminine. (Figure 3)

**Romania**

**Greece**

![Gender segmentation](image)

Fig.3: Gender segmentation

The main sources of documentation are the scientific databases to which university has subscribed for 61% of the PhD students. The databases are sources of documentation for 3% of the PhD students, and the university library represents the place where students get access to their resources for 10%. Although they are the Google generation, only 2% access Google Scholar, Google Academic and only 4% institutional digital repositories. More than half of the responders (33%) from UOC prefer Google Scholar as their first source of information, their second choice being the OPACs of the Greek libraries (12%). The university library OPAC and the scientific databases to which the library has subscriptions equally value as their third choice (10%), while they also equally resource to OPACs of libraries abroad and Open Access Material (10%). The Institutional Repository and the Faculty Courses are also an important source of information (5%). (Figure 4)
68% of PhD students prefer online resources, 24% traditional and only 8% media resources. UOC PhD students also heavily prefer online resources over traditional ones or the media, although the respective figures show a quite increased preference for the online material (79%), and a much less interest in traditional sources (18%) or in media (3%). (Figure 5)

Referring to knowledge level of scientific information evaluation only 10% have a high level of information evaluation, 58% have a low level and 32% have a medium level.
UOC PhD students are quite confident regarding their level of scientific information evaluation, since more than half consider they have a high level of information evaluation (56.52%), while the rest (43.48%) have a medium level. (Figure 6)

In order to assess information several different criteria were proposed. The criteria for scientific information evaluation were accepted as follows: Author’s name 28%, number of citations 27%, journal’s name 24% and article references 21%.

When assessing the value of a scientific article, UOC PhD students value more the number of citations obtained (32%) and article references and bibliography (28%). Journal’s name is also judged as quite important (24%), while Author’s name is their last criterion (16%). (Figure 7)
The criteria proposed to evaluate websites obtained the following results: 34% of the respondents use the criterion of site organization during their assessment, equally, meaning that 27% check the site host and author’s data while 12% are interested in how up to date the site is.

For UOC students the prevailing criterion in evaluating the credibility of a web site is its organization (46%) and actualization (33%). They do not value as much the host page (17%) while the author’s data are not so important for them (4%). (Figure 8)

Regarding the assessment criteria of the scientific information quality disseminated by the web pages, all respondents consider the content most important 33%, the copyright restrictions 13%, scope 18%, information costs 18%, form and availability 18%.
When assessing the quality of scientific information disseminated by web pages, UOC students also equally consider copyright restrictions, scope, information costs, content, form and availability. (Figure 9)

![Fig.9: Assessing web pages criteria](image)

The most used criterion in assessing the content of a scientific paper is accuracy, 23% followed by originality 21%. The other criteria, in order of importance are the references – 15%, the evolution of the presented phenomenon – 14%, links to other resources and quality of expression – 11% also the scientific committee – 5%.

University of Crete students also value most the accuracy of a scientific paper (20%), closely followed by originality (19%) and the evolution of the phenomenon presented (17%). Links to other resources (14%), quality of expression (13%) and references (12%) are also valued as important. Scientific committee is the less valued criterion (5%). (Figure 10)
Fig. 10: Assessing content of scientific article

In case of a blog or website evaluation, criteria are considered at the same extent, namely: is the scope clear?, what is it dealt with?, novelty, format and presentation thoroughness.

For Romania 25% are interesting in novelty, 24% what issues are treated, 21% depth of presentation, 19% in clear scope, 11% in format. For UOC there are equal considerations. (Figure 11)

Fig. 11: Assessing criteria for blogs and websites
3. CONCLUSIONS

The period of research and writing PhD thesis is an edifying stage in the future researcher’s development. During this period the PhD students must have research skills. Information literacy - which is necessary to any student through his/ her abilities to identify the need of information, to localize sources, to evaluate and use these sources efficiently, to use them in the process of learning and content creating and then to be able to generate knowledge - becomes impetuously necessary during the doctoral school.

The dissemination of the PhD students’ research studies must be guided through presenting and acquiring knowledge of scientometrics, academic communication and critical evaluation of the obtained information.

A surprise element in the UTBV survey is the fact that a small percentage of PhD students use Google Scholar as a source of information. Google Scholar is a free scientometric base which comprises only documents that are academically indexed by Google. Every indexed document has the indexed on Google Scholar quotations enclosed as well. Another surprise is the low level of knowledge regarding the scientometric databases, especially because the most PhD students use as main sources of information the databases to which university has subscribed, among which there are also the two scientometric databases, ISI Web of Science and Scopus. We think that the fact that they do not know the institutional digital repositories, free resources comprising scientific production of universities, is at their disadvantage and at the disadvantage of the scientific research community. The principles of open access to information, namely the green way, the institutional digital repositories should be promoted in order to change the researchers’ mentality. The results of research studies do not achieve their mission if they are not displayed at the community’s disposal by open access. The research surveys are financed through public money and consequently they have to reach the community.

The high percentage of UOC students that use Google Scholar as their first source of information can be explained by the fact that most of the databases to which UOC Library subscribes are indexed in Google Scholar, so UOC users have access to the material through Scholar without realizing it is not free. At the same time, our OpenUrl resolver’s integration with the vast majority of the Library’s licensed material makes thinks easier to the users, because a link is provided both in Google Scholar and in most of the databases that directs them to all other sources that provide access to the requested material. The high percentage of Greek catalogs can be explained by the parallel existence of two search portals that act as union catalogs to all Greek academic Libraries: Zephyr portal (http://zephyr.lib.uoc.gr) is a virtual union catalog that provides real-time searching of Greek academic libraries using z39.50 protocol, while HALUC (www.unioncatalog.gr) is a physical union catalogue of Greek academic libraries updated once per year. At the same time the National
Documentation Centre’s Argo search portal (http://argo.ekt.gr) provides the same functionality for Greek public and special libraries. The satisfactory percentage of usage of Institutional Repository and Open Access material can be explained by the fact that the Library has devoted significant efforts in the promotion and support of Open Access initiatives: the Library’s Institutional Repository was the first of its kind created in the Greek academic environment and is well established in UOC academic community, while it is also registered at the top institutional repositories on an international basis. The fact that when assessing the value of a scientific article, UOC PhD students value more the number of citations obtained and article references and bibliography can be explained by the strong emphasis the library but also the faculty has in instructing students about the values of papers with international acknowledgement. PhD students have stable knowledge regarding the scientometric databases, which they heavily use in their research. The two main scientometric databases, ISI Web of Science and Scopus are provided to all Greek academic libraries via the HEAL-Link consortium.

The information assessment criteria in the web space should be promoted and compulsory skills must be generated for Ph.D. students and university researchers and others.

The fact that the majority of the PhD students, who know these notions, know them due to their individual study imposes the organization of some presentation of the above mentioned notions.

Information Evaluation as a Decision Support has to be developed in university. This should lead to the clarification of the notion of information evaluation.

REFERENCES


British Theatre Archives: Scattered but Accessible

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Abstract: Theatres are often under-funded, yet they produce a vast amount of archival material that is not limited to documents. The archival material produced by a theatre has immediate value to future performances, whether through the re-use of costumes and props, or through the analysis of stage directions and/or video recordings of previous performances. The trend in digitizing archival and special collections materials provides new opportunities for access to finding aids and collections. However, most theatre archives cannot afford to provide this level of access to their collections or even the traditional option of in person research opportunities. The focus of this study is to examine the archives of selected British theatres, theatre companies and educational/cultural organizations to determine how the archives are managed, how collections differ based on the type of institution in which they are housed, and access to the collections. Unlike existing work on theatre archives, this research looks critically at the various manifestations of archives related to theatre and how the type of institution maintaining a collection affects its completeness, organization and accessibility.

Keywords: Theatre, Performing Arts, Archival Collections, Access, Britain

“We do on stage things that are supposed to happen off. Which is a kind of integrity, if you look on every exit being an entrance somewhere else.”
— Tom Stoppard, *Rosencrantz and Guildenstern are Dead* (1994)

1. Introduction

Theatres often cannot afford to employ archivists, yet they produce a vast amount of archival material, not all of it documents. The archival material produced by a theatre has immediate value to future performances, whether through the re-use of costumes and props, or through the analysis of stage directions and/or video recordings of previous performances. The focus of this study is to examine the archives of selected British theatres, theatre companies and educational/cultural organizations to determine how the archives are managed, how collections differ based on the type of institution in which they are housed and how accessible the collections are to the public and researchers. Unlike existing work on theatre archives, this paper looks at the various manifestations of archives related to theatre and how the type of institution maintaining a collection affects its completeness, organization and accessibility.
Literature Review

Searching for information about theatre archives reveals that relatively little can be found about theatre archives in the form of published material. The majority of material takes the form of directories listing the available archives in a given country as seen in the Directory of Performing Arts Resources (1998) and Innes, Carlstrom and Fraser (1999). The Theatre Library Association in North America publishes an occasional journal, Performing Arts Resources (2001, 2004, 2008). The Society for Theatre Research in Britain also publishes a journal entitled Theatre Notebook, but it deals more with research and performances than with resources related to theatres or performances. In her article “Performing Arts Archives” and other works, Francesca Marini (2007, 2008) looks at the issues related to archiving performing arts materials and how scholars and members of the profession utilize them. These works do not consider how the nature of the institution housing an archive impacts its maintenance and accessibility to researchers and the public at large.

Methodology

The following research into specific companies, educational/cultural institutions, “corporate” theatre groups and individual theatre archives reveals that archival material related to the theatre takes many forms and finds a home wherever it can. Beginning with the Royal Shakespeare Company and concluding with a look at individual theatres, this paper focuses on a select few but important archival collections related to theatre. The methodology has been to examine the Royal Shakespeare Company Archives held by the Shakespeare Birthplace Trust, Shakespeare’s Globe Library and Archive, the University of Bristol Theatre Collection, the Victoria and Albert Theatre and Performance Archive, Delfont Mackintosh Theatres Ltd. and the Royal Theatre Haymarket in turn. Research into these theatre collections included website analysis and consultation, consultation of pertinent directories for British theatre archives and contacting archivists or other staff directly when necessary. Contacting theatre archivists and staff was often the only way to find out information on an individual theatre or a corporate group of theatres.

Results by Archive

Royal Shakespeare Company

The Shakespeare Birthplace Trust Library and Archive contains collections that cover all aspects of Shakespeare’s life, work, times, and the history of Stratford upon Avon. The Shakespeare Birthplace Trust Library and Archive also maintains the Royal Shakespeare Company Archive. This archive includes production materials covering the history of the Royal Shakespeare Company and its predecessor, the Shakespeare Memorial Theatre, from 1879 to the present. The archive includes photographs, programs, prompt books, reviews, and designs and houses video recordings of productions from 1982. The Shakespeare Birthplace Trust Library and Archive takes responsibility for
the maintenance of the collection with no monetary contribution from the Royal Shakespeare Company for staff or preservation.

While the library works on retroactively converting their card catalog into an online searchable catalog, the Royal Shakespeare Company’s performance database can be used to search for productions, performances, plays and people involved in the productions. Productions can be searched for press nights to order programs and cast and crew details. Names can be searched to look for productions that involved a particular actor or director. Theatre can be searched for archival materials such as prompt books, photographs, music, videos and production records as detailed on their website. The online catalog and the availability of the collection within the library and archive in the heart of Stratford-upon-Avon facilitate access for the public and some of the production images are available online. However, while the library and archive maintain production materials from the Royal Shakespeare Company, it appears that institutional records related to the day-to-day functions of the company have not been placed in the care of the Shakespeare Birthplace Trust.

**Shakespeare’s Globe**

Shakespeare’s Globe contains three distinct types of archives: the performance archive, the costume archive and the institutional archive. The performance archive holds items relating to the actual performances, such as recordings, prompt books, wardrobe bibles, and an assortment of reviews and ephemera from Globe productions since its opening in 1996. The costume archive contains a selection of costumes created using carefully researched and reproduced Elizabethan techniques. Shakespeare’s Globe also has a library that holds texts and criticism of plays by Shakespeare and his contemporaries, as well as twentieth-century and current works on the Globe, Shakespeare and his contemporaries, theatre history and social and cultural history of early modern England. The library catalog is available online but no online access is available for the archives.

Not all theatres or companies manage to hold on to complete records of their activities and productions. In some cases, they may have maintained them for an extensive period of time or at least kept the material without taking particular efforts for maintenance before choosing to pass the collections on to an educational or cultural institution better capable of caring for and providing access to the materials. This is often frequently the case for private collections related to the theatre, either the personal papers of those associated with theatre or individuals building artificial collections. Two of the most prominent repositories for theatre materials are the University of Bristol Theatre Collection and the Victoria and Albert Museum in partnership with the National Art Library.

**University of Bristol Theatre Collection**

Looking at the University of Bristol’s massive theatre collections reveals the many ways in which the archives can be organized in an educational
institution. Once removed from their theatre of origin, the collections can no longer be considered institutional. The University of Bristol Theatre Collection was founded in 1951 and has since expanded and become a fully accredited museum and theatrical research center. It still serves as a research resource for the drama department at the University of Bristol and for the Bristol community. The collection focuses on British theatre history, with strengths in Victorian theatre, post World War II theatre, live and performance art, theater in the South West and scenery and costume design. A significant portion of the holdings has come from donations and bequests of collectors and professionals who wished to preserve a record of the theatre in Britain.

One of the largest and potentially most significant artificial collections created by the University of Bristol Theatre Collection is the women’s theatre collection. It creates a record of women’s contribution to theatre, which includes playwrights, directors, actors, characters, administrators and theatre groups. Scripts by women of performed but not necessarily published plays have a tendency to be lost as companies move onto new projects or cease operations, but in 1990 the Theatre Collection established this collection to preserve them and make them available to scholars.

The University of Bristol Theatre Collection continues to grow in size and prominence. Recently they were chosen to receive the world-renowned Mander & Mitchenson Theatre Collection. This move will create one of the world’s largest theatre history collections. The combination of artwork, recordings, props, photography, costumes and ceramics with a vast array of archival material is expected to provide a comprehensive record of British professional theatre, which is described on their website. It is important to note that the level of access to the collections online is much higher with the University of Bristol Theatre Collection than with either the Royal Shakespeare Company or Shakespeare’s Globe. While it does not make everything available and not all collections have an online finding aid, the presence of video along with images and finding aids makes it more accessible to the public at large.

**Victoria and Albert Theatre and Performance Archives**

The theatre and performance archives held by the Victoria and Albert Museum and the National Art Library comprise a varied range of materials and collections, much like those held by the University of Bristol Theatre Collection. The Victoria and Albert theatre and performance collections include archives from performing arts companies and other organizations associated with the performing arts, as well as from individual performers, stage designers and private collectors among others. Their particular strength is in the archives of government bodies for the arts, such as the Arts Council. All of their archival collections hold a wide range of materials, among which there may be diaries, letters, manuscripts, photographs, institutional business records, newspaper cuttings and designs. They may also contain a variety of the ephemera typical of the theatre such as playbills and programs. They have organized and indexed the collections with as much variation as the collections themselves.
The theatre and performance collection at the Victoria and Albert Museum and the National Art Library does make some of its content available online. Images as well as finding aids are provided though by no means for every collection. Perhaps its most significant contribution to theatre archiving to date is its collaboration with the Theatre Information Group in efforts to establish a National Performance Database. To date the database infrastructure and data seem to be in place, and the member organizations are seeking funding for final implementations and launch of the service according to their website.

**Delfont Mackintosh Theatres Ltd.**

Delfont Mackintosh Theatres operates seven theatres, five freeholds and two very long leases, which have all undergone or are undergoing refurbishments to maintain their role as prominent establishments in London’s West End, which is detailed on their website. According to their archivist, Rosy Runciman, the main archive for the seven theatres is maintained at the Head Office of Delfont Mackintosh Theatres Ltd. in Bedford Square. She also mentioned that the Prince of Wales Theatre has an archive of its own that had been in place for some years, and they have chosen not to alter that arrangement. For the seven theatres under the Delfont Mackintosh umbrella, they keep posters, programs, leaflets, and information and photographs about the architectural history of each theatre. Using the material on hand as well as available in other theatre archives they have created an extensive exhibition about each theatre’s architectural and production history since it first opened as they have been refurbished.

When asked about other archives holding collections related to or from any of their theatres, Ms Runciman mentioned that the Victoria and Albert Museum theatre collections are more comprehensive than those held by Delfont Mackintosh Theatres in many respects. This is due primarily to the fact that the museum and its collections were established long before Delfont Mackintosh Theatres. The organization only took over the running of some of the theatres, such as Wyndham’s and the Noel Coward as recently as 2006. She mentioned that the Albery family formerly owned both of these theatres and sold the archives to the Harry Ransom Centre. For this reason the joint archives held by Delfont Mackintosh Theatres had to start from scratch in terms of rebuilding a collection for their use. This can be contrasted with the substantial collection maintained and kept at the Prince of Wales Theatre prior to its acquisition by Delfont Mackintosh Theatres. She also mentioned Bristol University Theatre Collection’s acquisition of the Mander and Mitchenson Theatre Collection, and said that the collection is superior to those held by the theatre group.

**Royal Theatre Haymarket**

A historical note in the program for a recent production of *Rosencrantz and Guildenstern are Dead* (2011) at the Royal Theatre Haymarket revealed that they were attempting to gather archival materials related to the theatre. Ms Cath Penny is not the archivist for the theatre but rather a historian working on a collaborative project between the theatre and a university that requires archiving
in order to complete the larger project. She deals primarily with historical materials, not records related to the theatre’s operation. She explained the types of materials they hold and the specific situation with the archives in more detail.

Currently the Royal Theatre Haymarket holds a variety of documents dating back from 1780, with a few earlier, to about 1970. According to Ms Penny, “They take the form of receipt books dealing with box office sales, bar takings, wages for staff and actors along with Director's minutes.” The fullest records come from the Frederick Harrison period, and they also have an extensive collection of First Night issues and several volumes of contracts between the theatre management and playwrights/actors/producers going back to 1810. They have a large collection of signed photographs, drawings and original watercolors documenting productions and alterations to the building. There are also books, prompt books and annotated prompt copies, the earliest of which is one from Samuel Foote's day in the mid to late seventeenth century. There is also a robust collection of programs that date from the 1800s.

Private ownership has resulted in the dismemberment of the institutional archives as such, with possibly some help from a fire. Production related materials remain largely intact because their association lies with the physical theatre, whereas records seem to go the way of the owner or company associated with the theatre. She also mentioned that the Victoria and Albert Museum and the archives at Westminster Council hold extensive collections of Royal Theatre Haymarket material and that still more lies in the hands of private collectors.

**Other theatres**

The Directory of Performing Arts Resources released in 1998 by the Society for Theatre Research and the former Theatre Museum (now absorbed into its parent body, the Victoria and Albert Museum) provides a nearly comprehensive list of available theatre archives in Britain. The list for London includes only three individual theatres, though the Prince of Wales Theatre is not one of them and Ms Runciman of Delfont Mackintosh Theatres mentioned they have had their own independent archive for a number of years. The three theatres mentioned in the directory are the Theatre Royal Drury Lane; the London Palladium Theatre, which also holds material for the Stoll Moss Theatre; and the Finsbury Archive, which is listed as containing the Sadler’s Wells Collection, considered one of the “largest collections of material in London on an individual theatre” according to the Directory of Performing Arts Resources (1998). Gauging by the information contained in the directory, individual theatres maintaining their own archives has not been a prevalent trend in London. It would also seem from the example of the Royal Theatre Haymarket that a theatre may retain a large amount of material without making a concerted effort to maintain, organize or provide access to it.

**Conclusion**

Theatre archives take on vastly different structures depending on the organization responsible for their maintenance. An archive maintained by its
respective theatre or company varies significantly from an archive maintained by a larger cultural or educational institution. While removed from their parent institutions, archives held by larger organizational bodies such as the University of Bristol or the Victoria and Albert Museum often have the advantages of better maintenance and more accessibility for research. Individual theatres may not be able employ an archivist of their own or take the time and care with their archives that a larger institutional body can give them. Looking into the details of case studies on theatre collections transferred to educational or cultural institutions in the United States reveals some of the issues that can result for isolated theatres or companies attempting to maintain their own archives.

The transference of the archives of the Shakespeare Festival to the New York Public Library demonstrated the sheer amount of material that can accumulate in a theatre or company over a relatively short span of time. Rogan (2011) estimated 2500 linear feet, and it was spread across multiple physical locations and comprised a variety of formats. Compared with theatres and companies in the United Kingdom that have, in many cases, been operating for over two hundred years, it is no wonder that maintaining and providing access to archival materials is beyond private or small enterprises. The movement to the digital age has also proved to be something that only well-supported, large institutions can manage and even then with limitations. Smaller operations such as individual theatres or even corporate-structured theatre groups cannot manage to provide online access to databases of materials held, let alone images or recordings. Even in the case of the Royal Shakespeare Company Archive and Shakespeare’s Globe, the online availability is far more limited than that of the University of Bristol Theatre Collection or the Victoria and Albert Museum. However, there is the movement spearheaded by the Victoria and Albert Museum under the Theatre Information Group to form an online database of performances for the entirety of Great Britain that will hopefully fill some of the gap in online information about theatre performances.

One thing that is clear is that in one form or another, in one location or another or many, theatre archives survive into the future. Depending on the theatre or collection, they may or may not have complete institutional records, they will probably not retain costumes except in special cases, they will maintain detailed and complete production files, and in many cases a private collector or individual responsible for the creation of records related to the theatre will retain them and donate them one day in the future. They may not reside with the theatre or company of origin or at least will not reside there indefinitely, but theatre records and archival materials will be acquired, processed and made accessible to researchers and the public once they pass into the hands of a larger cultural or educational institution.

References


Penny, Cath. E-mail message to author. September 26, 2011.


Performing Arts Resources 22 (2001).


Runciman, Rosy. E-mail message to author. September 21, 2011.

Stoppard, Tom. Rosencrantz and Guildenstern are Dead. New York: Grove Press, 1994


V&A Theatre & Performance Enquiry Service. E-mail message to author. September 21, 2011.
Core competencies for academic reference librarians in Croatia

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Abstract: The paper presents results of a survey of reference librarians in Croatian academic libraries. The survey is a part of an international study. Survey findings provide valuable data regarding skills and competencies needed in the reference departments today and in the future. Three groups of skills and competencies are analysed – general skills, technology skills and personal skills. Conclusions are made about the present competencies of Croatian reference librarians in academic libraries as well as about the importance of lifelong learning for improving their competencies in future.

Keywords: academic library, reference librarian, competencies, skills

1. Introduction

The first nationwide investigation into subject of LIS competency framework in Croatia was conducted in 2009 as presented by Machala and Horvat (2010). In 2009 the Training Centre for Continuing Education of Librarians obtained funds from the National Foundation for Science, Higher Education and Technological Development to carry out a one-year project "Lifelong learning for librarians: learning outcomes and flexibility" (2009). A comparative analysis of data gathered by librarians and library managers revealed key subject-specific and generic competencies in field of library and information science in Croatia. The findings of the research were used to create a model of LIS competency framework strongly valued by labour market. The model was used in creating some of the questions in the questionnaire for this survey.

Our survey findings will provide valuable data regarding the skills and competencies needed in the reference departments now and in the future. It will help us make some conclusions about the present formal education of Croatian reference librarians in academic libraries as well as about the importance of lifelong learning for improving their competencies in the future. Academic LIS
education in Croatia has thirty-five year old tradition. From the very beginning reference has been core in the LIS curriculum. The Library Act (1997) stipulates that only graduate librarians may be employed in libraries. After a state examination graduate librarians have the opportunity to advance and become senior librarians and senior advisors. Continuing professional development for librarians in Croatia was institutionalized in 2002 through centrally established Training Centre for Continuing Education of Librarians. Croatian academic libraries were affected by three main factors at the beginning of 21st century: changes in the system of higher education, development of information technology and the processes in the overall social and political environment (Petrak and Aparac-Jelusic, 2005).

If we look outside of Croatia, in 2003 Reference and User Services Association (RUSA), a division of the American Library Association, approved Professional Competencies for Reference and User Services Librarians. The purpose of the guideline is to provide librarians, libraries, and information centres with a model statement of competencies essential for successful reference and user services librarians. These competencies are focused on the abilities, skills, and knowledge that makes reference and user services librarians unique from other professionals. Competencies are defined as behaviours that excellent performers exhibit more consistently and effectively than average performers. A behavioural basis is necessary because effective assessment of competencies depends on observed behaviour. Reference librarians are defined as librarians that assist, advice, and instruct users in accessing all forms of recorded knowledge. The assistance, advice, and instruction include both direct and indirect service to users. Competencies must be relevant to the particular job requirements, in this case to academe. Therefore, individuals and organizations applying these guidelines may wish to select those strategies for meeting the competency goals that are most appropriate to their situation. At the international level, IFLA Digital Reference Guidelines had not been developed further to a document explicitly on competencies.

In 2010 Bosanquet wrote about core skills and competencies, stressing the fact that usually wider environments in which people work fail to recognize complexities of reference work and the contribution that the information professional makes to keeping accessible relevant information available from the desk top. Library profession must determine its core business, create a value proposition and utilise its core competencies to deliver outcomes aligned to the strategic objectives of its funding body. Profession has to be a central player in the digitised information landscape (Bosanquet, 2010). Academic reference librarians are being asked to take on a wider range of roles on their campuses and they need a framework for their professional development (Cmor, 2010).

Our survey will try to put competencies of Croatian academic reference librarians in the context of new trends and developments.

2. Sample, methodology and hypothesis of research
The survey is a part of an international study which covers 14 countries (Australia, Bulgaria, Croatia, Estonia, France, Greece, Mexico, Netherlands,
New Zealand, Norway, Poland, Romania, Turkey and USA). A unique questionnaire was made and the teams from each country had to translate it, distribute it to reference librarians in academic libraries and analyse results. This paper presents the analysis of Croatian results. Questionnaire consisted of 23 questions that were organised in five groups. The first group consisted of 7 questions about the respondents’ age, gender, working experience and education. The second group offered two questions about what the respondents do in a typical week. Those questions were followed by the third group with six questions about respondents’ opinion of the most important general, technology and personal skills of today’s reference librarian in academic libraries. In the fourth group of another six questions respondents were asked about the most important general, technology and personal skills that reference librarians have to develop to meet professional demands over the next decade. The last group posed two questions on what skills and knowledge requirements have changed for reference librarians over the last five to ten years.

In November 2011 the online questionnaire was sent to reference librarians in all the Croatian university and faculty libraries. The list of 83 libraries was extracted from the Ministry of Culture Library Database (2011) and from several other lists available at the Croatian National and University Library website (2011). Websites of all the libraries from our sample were searched for names and e-mail addresses of reference librarians. All of them were invited to answer our online questionnaire. When a reference librarian could not be identified, the invitation was sent to the library director or another librarian who was asked to forward it to the reference librarian in the library. One librarian from each library was expected to answer the questions. Each librarian received an e-mail message explaining the purpose of the study with a link to a web-based survey. The survey was anonymous. Three weeks after the initial invitation (November 2011), invitation was repeated, and two months after the initial invitation the survey was closed. During this period 61 librarians answered the survey (response rate 73.5%). Total number of respondents varies from question to question (from 36 to 58) as not all the respondents filled in the survey completely. Close-ended questions were analyzed using descriptive statistics including frequency counts and percentages, while open-ended questions were coded using content analysis.

We had three hypotheses for our survey. First of all, we presumed that formal education is of a great importance for being a good reference librarian. Secondly, we knew that there is a lack of library staff in Croatian academic libraries. That is the reason why sometimes one or two librarians in, e.g., faculty library, have to do all the work (acquisition, management, cataloguing, circulation, reference work etc.). The third hypothesis was that Croatian reference librarians in academic libraries think that the most important general skills are IT skills, search skills and foreign languages; that the most important technology skill is online searching and the most important personal skills are verbal and written communication.
3. Results

There are 91.5% female and 8.5% male reference librarians in our sample. Under 30 years of age are 11.7% of them, 28.3% are between 31 and 40 years of age, 26.7% are between 41 and 50 years of age, 28.3% between 51 and 60 years, and 5% are older than 60. All Croatian reference librarians in academic libraries have MA, 86.2% of them in LIS and at least one other scientific field. Another 13.8% have MA in other discipline(s).

Table 1. Typical activities of reference librarians in Croatian academic libraries

<table>
<thead>
<tr>
<th>Activity</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Database search</td>
<td>76.2</td>
</tr>
<tr>
<td>2 Circulation</td>
<td>59.5</td>
</tr>
<tr>
<td>3 Answering reference questions</td>
<td>59.5</td>
</tr>
<tr>
<td>4 Cataloguing</td>
<td>54.8</td>
</tr>
<tr>
<td>5 Acquisition</td>
<td>42.9</td>
</tr>
<tr>
<td>6 User education</td>
<td>42.9</td>
</tr>
<tr>
<td>7 Giving information about library</td>
<td>40.5</td>
</tr>
<tr>
<td>8 Online reference services</td>
<td>40.5</td>
</tr>
<tr>
<td>9 Inter library loan</td>
<td>35.7</td>
</tr>
<tr>
<td>10 Inventory</td>
<td>35.7</td>
</tr>
<tr>
<td>11 Classification</td>
<td>35.7</td>
</tr>
<tr>
<td>12 Catalogue search</td>
<td>33.3</td>
</tr>
</tbody>
</table>

Asked about working experience in the library, 3.4% answered that they had less than one year of working experience in the library, 8.6% answered that they had one to three years of experience, 15.5% had four to seven years of experience, 32.8% had 8-15 years of working experience, 15.5% had worked for 16-20 years in the library, 6.9% for 21 to 25 years, 6.9% for 26-30 years, and 10.3% for more than 30 years.

What the most usual work reference librarians do in a typical week is database search (76.2%). Circulation is the second most usual activity (59.5%), as well as answering reference questions (59.5%). We can say that those three activities are the most important to reference librarians. But they are followed by some activities supporting reference service such as cataloguing and acquisition. Interlibrary loan is present in 35.7 libraries and followed by catalogue search (33.3%). Online reference services are expected to be on a higher place in future – today, only 40.5% mark them as typical activity. Table 1 shows the twelve respondents’ most usual weekly activities. Some other activities (done weekly by less than 30% of respondents) are budgeting, promotion, marketing, collection development, exhibitions, statistics and preservation.

Asked about the most important general competencies and skills, librarians consider search skills as the most important skills (82.9%). All the other skills, except IT skills with 34.1%, are not so important. Table 2 shows general skills that were chosen by respondents as the most important skills for a reference
librarian in an academic library today. It is interesting that only 9.8% of respondents consider foreign languages as an important skill. Nevertheless, the skill is important while performing majority of other actions, such as searching (that is of a great importance for the respondents). We presume that there is no reference librarian in Croatian academic libraries who does not use English language on an everyday basis, so presumably they think that there is no doubt about the need of knowledge of the English language.

Table 2. Important general competencies and skills for reference librarians in Croatian academic libraries

<table>
<thead>
<tr>
<th>General skill</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Search skills</td>
<td>82.9</td>
</tr>
<tr>
<td>2 IT skills</td>
<td>34.1</td>
</tr>
<tr>
<td>3 Traditional reference interview</td>
<td>14.6</td>
</tr>
<tr>
<td>4 Autonomy in work</td>
<td>9.8</td>
</tr>
<tr>
<td>5 Foreign languages</td>
<td>9.8</td>
</tr>
<tr>
<td>6 Managing new situations</td>
<td>4.9</td>
</tr>
<tr>
<td>7 Classification</td>
<td>2.4</td>
</tr>
<tr>
<td>8 Research</td>
<td>2.4</td>
</tr>
<tr>
<td>9 Collection management</td>
<td>2.4</td>
</tr>
<tr>
<td>10 Cataloguing</td>
<td>2.4</td>
</tr>
</tbody>
</table>

Another set of skills are technology skills. The most important technology skill for our respondents is online searching (97.8%), skill that is closely related to the highest ranked general skill. Surprisingly, the second most important technology skill is web maintenance. That shows the variety of activities that reference librarians in Croatian academic library have to do. Very important skill is communication through social media (64.4%). Social networking sites (SNS), as one of the most important Web 2.0 services, became very popular during the last six or seven years.

Libraries are aware of it, they try to be where their users are and that is the reason why reference librarians have to do some of their reference work on SNSs. Less important technology skills (5% or less) are Web design, software and hardware troubleshooting, chat and instant messaging (IM).

Table 3 shows which technology skills reference librarians in Croatian libraries consider the most important. Traditional reference interview (14.6%) seems not that important because academic librarians know their user profile well.

Table 3. Important technology skills for reference librarians in Croatian academic libraries

<table>
<thead>
<tr>
<th>Technology skills</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Online searching</td>
<td>90.0</td>
</tr>
<tr>
<td>2 Web maintenance</td>
<td>50.0</td>
</tr>
<tr>
<td>3 Social media</td>
<td>25.0</td>
</tr>
<tr>
<td>4 Web design</td>
<td>5.0</td>
</tr>
</tbody>
</table>
Table 4 shows personal skills and percentage of reference librarians in Croatian academic libraries that think those skills are the most important. For librarians in Croatian academic libraries the far most important personal skill is verbal communication (90.2%). That was expectable, because of the nature of reference work – reference librarians have to know how to communicate with their users in order to offer the best possible service. Some of the other important personal skills are closely related to verbal communication – working in teams (22%), approachability (22%), adaptability (22%), written communication (19.5%). It is interesting that the ratio of teaching skills and listening is 1:1 (14.6%) showing appropriate behaviour of information librarian. Other personal skills are self-motivation, organizational awareness, listening, stress management and others.

<table>
<thead>
<tr>
<th>Personal skill</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Verbal communication</td>
<td>90.2</td>
</tr>
<tr>
<td>2 Working in teams</td>
<td>22.0</td>
</tr>
<tr>
<td>3 Approachability</td>
<td>22.0</td>
</tr>
<tr>
<td>4 Self-motivation</td>
<td>22.0</td>
</tr>
<tr>
<td>5 Adaptability/flexibility</td>
<td>22.0</td>
</tr>
<tr>
<td>6 Written communication</td>
<td>19.5</td>
</tr>
<tr>
<td>7 Organizational awareness</td>
<td>19.5</td>
</tr>
<tr>
<td>8 Listening</td>
<td>14.6</td>
</tr>
<tr>
<td>9 Teaching skills</td>
<td>14.6</td>
</tr>
<tr>
<td>10 Building relationships with co-workers</td>
<td>9.8</td>
</tr>
<tr>
<td>11 Stress management</td>
<td>4.9</td>
</tr>
<tr>
<td>12 Conflict management</td>
<td>4.9</td>
</tr>
<tr>
<td>13 Sense of humour</td>
<td>4.9</td>
</tr>
</tbody>
</table>

After choosing the most important skills for today’s reference librarians, respondents were asked to mark general, technology and personal skills for the next decade (Table 5). The most important general skill for future is the same skill that is the most important today – search skill (93.9%). Respondents think that foreign languages will be more important in the future than they are today (they put the skill on the second place). Other general skills for the next decade are: managing new situations, self-reliance, IT skills, traditional reference interview, collection management and others.
Table 5. General skills for the next decade

<table>
<thead>
<tr>
<th>General skills</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Search skills</td>
<td>93.9</td>
</tr>
<tr>
<td>2 Foreign language</td>
<td>15.2</td>
</tr>
<tr>
<td>3 Managing new situations</td>
<td>9.1</td>
</tr>
<tr>
<td>4 Self-reliance</td>
<td>9.1</td>
</tr>
<tr>
<td>5 IT skills</td>
<td>9.1</td>
</tr>
<tr>
<td>6 Traditional reference interview</td>
<td>9.1</td>
</tr>
<tr>
<td>7 Collection management</td>
<td>9.1</td>
</tr>
<tr>
<td>8 Research</td>
<td>6.1</td>
</tr>
<tr>
<td>9 Classification</td>
<td>6.1</td>
</tr>
<tr>
<td>10 Cataloguing</td>
<td>6.1</td>
</tr>
<tr>
<td>11 Ethics</td>
<td>3.0</td>
</tr>
<tr>
<td>12 Publishing</td>
<td>3.0</td>
</tr>
</tbody>
</table>

The analysis of technology skills for the next decade shows similar results to those for today – the most important is online searching (92.9%), followed by Web maintenance, social media, Web design and others (Table 6). Although the results show the same ranking as the results for today’s technology skills, we can see that percentages are different (except for online searching) - Web maintenance will be more important in the future (69% comparing to 50% in the Table 3), social media will also be more important (64.3% comparing to the 25% in the Table 3), Web design as well (38.1% comparing to 5%), software troubleshooting (31% vs. 5%) and chat (21.4% vs. 5%).

Table 6. Technology skills for the next decade

<table>
<thead>
<tr>
<th>Technology skill</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Online searching</td>
<td>92.9</td>
</tr>
<tr>
<td>2 Web maintenance</td>
<td>69.0</td>
</tr>
<tr>
<td>3 Social media</td>
<td>64.3</td>
</tr>
<tr>
<td>4 Web design</td>
<td>38.1</td>
</tr>
<tr>
<td>5 Software troubleshooting</td>
<td>31.0</td>
</tr>
<tr>
<td>6 Chat/IM</td>
<td>21.4</td>
</tr>
<tr>
<td>7 Programming</td>
<td>9.5</td>
</tr>
<tr>
<td>8 Hardware troubleshooting</td>
<td>9.5</td>
</tr>
</tbody>
</table>

Important personal skills for the next decade are also similar to the important personal skills for today. The most important is again verbal communication (63.6%), followed by teaching skills (36.4%), self-motivation (24.2%). List of the ten most important personal skills for the next decade, according to reference librarians in Croatian academic libraries, is in Table 7. An open-ended question was – which skills and knowledge requirements have changed for reference librarians over the last five to ten years. The answers were that today we have more available information, higher need for information, better access to information, we have less printed sources, we have new library
services that evolved from new technologies, and we have SNSs. Foreign languages (especially English) are more important than in previous times. Also, comparing to the last decade, there is higher need for information literacy education, automated library systems are used and there is more stress at work. Those are the reasons why today, comparing to the past, more search skills, language skills, web design skills and educational skills are required.

**Table 7. Personal skills for the next decade**

<table>
<thead>
<tr>
<th>Personal skills</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Verbal communication</td>
<td>63.6</td>
</tr>
<tr>
<td>2 Teaching skills</td>
<td>36.4</td>
</tr>
<tr>
<td>3 Self-motivation</td>
<td>24.2</td>
</tr>
<tr>
<td>4 Written communication</td>
<td>15.2</td>
</tr>
<tr>
<td>5 Listening</td>
<td>15.2</td>
</tr>
<tr>
<td>6 Working in teams</td>
<td>15.2</td>
</tr>
<tr>
<td>7 Approachability</td>
<td>15.2</td>
</tr>
<tr>
<td>8 Adaptability / flexibility</td>
<td>15.2</td>
</tr>
<tr>
<td>9 Organizational awareness</td>
<td>15.2</td>
</tr>
<tr>
<td>10 Conflict management</td>
<td>12.1</td>
</tr>
</tbody>
</table>

Asked what skills or knowledge had they noticed lacking in their new hires, 37% of respondents answered – nothing. That is encouraging percentage that proves that lots of young librarians have all the skills they need. Respondents think that their new colleagues should be better at working in teams (18.5%) and more self-motivated (18.5%). Answers to the question are shown in Table 8.

**Table 8. Skills respondents have noticed lacking in their new hires**

<table>
<thead>
<tr>
<th>Skills</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Nothing</td>
<td>37.0</td>
</tr>
<tr>
<td>2 Working in teams</td>
<td>18.5</td>
</tr>
<tr>
<td>3 Self-motivation</td>
<td>18.5</td>
</tr>
<tr>
<td>4 Verbal communication</td>
<td>7.4</td>
</tr>
<tr>
<td>5 Search skills</td>
<td>7.4</td>
</tr>
<tr>
<td>6 Technology skills</td>
<td>7.4</td>
</tr>
<tr>
<td>7 Cataloguing</td>
<td>7.4</td>
</tr>
<tr>
<td>8 Empathy</td>
<td>7.4</td>
</tr>
<tr>
<td>9 Knowledge of e-sources (databases)</td>
<td>3.7</td>
</tr>
<tr>
<td>10 Current developments awareness (professional)</td>
<td>3.7</td>
</tr>
<tr>
<td>11 Listening</td>
<td>3.7</td>
</tr>
<tr>
<td>12 Organizational awareness</td>
<td>3.7</td>
</tr>
</tbody>
</table>

4. Conclusion

The analysis confirmed all our hypotheses. Firstly, all the reference librarians in Croatian academic libraries have at least MA degree, most of them in library and information science. Formal education is of a great importance for reference
librarians, as well as lifelong learning because new IT development requires new knowledge, skills and competencies. As we presumed, there is lack of library staff in Croatian academic libraries. Each academic library should have its reference librarian who should be only reference librarian and not do all the other work in the library.

Our investigation of academic reference librarians confirms that core competencies are predominantly user-oriented and technologically driven in 'bibliographical' perspective as stated by Machala and Horvat (2010).

There are no big differences between the present situation and respondents views concerning future general, technology and personal skills. The most important skills are search and IT skills, web maintenance and verbal communication. Foreign languages are considered to be of greater importance in the next decade than they are today. Respondents' views on reference librarian's qualification required in the future sound very promissing for us as educators: graduated librarian (66 %), senior librarian (23.4 %) and library advisor (2.1 %).

The next step in our survey is comparison with the results of other 13 international teams as a part of international study.

References


Cjelozivotno ucenje knjiznicara: ishodi ucenja i fleksibilnost (Lifelong learning for librarians: learning outcomes and flexibility), (2009), edited by A. Horvat and D. Machala, National and University Library, Zagreb


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Mary Jordan, Assistant Professor, Simmons College Graduate School of Library and Information Science, USA
Information Literacy: Information Sharing, Democracy and Life-long learning

Betty Maguire

Student on Masters in Information & Library Studies Programme, School of Library & Information Services, University College Dublin

Abstract: Information Literacy (IL) is becoming an increasingly important skill in today’s technology driven world. This paper examines some typical definitions of IL. Three specific models of IL, the Inquiry Learning Model, The Sconul Seven Pillars of IL Model, and the Digital Information Fluency Model, are then explored. The Junior Cert School Programme (JCSP), a functional and information literacy programme directed at young people deemed at risk of leaving school early, is discussed using details of correspondence between the author and Kathleen Moran, Senior JCSP Project Librarian. Finally, Information Literacy in relation to copyright, with emphasis on the recently published consultation paper of the review committee of the Copyright and Related Acts 2000 (CRRA) is discussed.

Keywords: Copyright, Democracy, Digital Literacy, Information Literacy (IL), Digital Literacy, Junior Certificate School Programme (JCSP).

Introduction

The role of libraries as central institutions of a democracy has long being established. This democratic role was a role of the early libraries established in the United States of America during the 1930’s: In the fourth volume of the first issue of *The Library Quarterly*, published in January 1934, J. Perlam Danton, in his article entitled ‘Our Libraries- The trend toward Democracy’ emphasises the value of the democratic role of ‘the library’ in a period of ‘universal economic uncertainty’ (Danton, P. (1934). p. 16), a phrase that has been echoed many times in the media and among the ordinary public during recent years. Yet, in this time of increasing access to information, the democratic role of libraries in providing equal access to that information, for all members of their communities, is becoming increasingly important. Information Literacy is also becoming an essential skill and librarians must take
it upon themselves as information professionals to assist their library’s user groups to develop their information literacy skills.

**Defining Information Literacy**

The concept of Information Literacy (IL) has been known since 1985 when Patricia S. Breivik described IL as an integrated set of skills and the knowledge of tools and resources (Grassian, Esther S., Kaplowitz, Joan R. (2001) p.5). Information Literacy had its roots in the Library Instruction Movement which began in early academic libraries in the early 1960’s. (ibid, p. 14). At the first ALA Conference in 1876, Melville Dewey said ‘the library is a school and the librarian is in the highest sense a teacher.’ (ibid). It was not until the 1980’s however, as technology was becoming more important in libraries, that Patricia Breivik reconceptialized the concepts and goals of library instruction as “information literacy” (ibid, p.20), and it is Breivik’s definition of IL which is still widely used today.

Another definition, developed in December 2004, is that provided by the Chartered Institute of Library and Information Professionals (CILIP), which defines Information Literacy as: ‘knowing when and why you need information, where to find it and how to evaluate it’ (http://www.cilip.org.uk/get-involved/advocacy/information-literacy/pages/definition.aspx). The SCONUL Working Group on Information Literacy defines an information literate person, as opposed to Information Literacy in general, stating: “Information literate people will demonstrate an awareness of how they gather, use, manage, synthesise and create information and data in an ethical manner and will have the information skills to do so effectively”(SCONUL Working Group on Information Literacy, 2011, p.3).

**Models of Information Literacy**

The three differing models of Information Literacy which will be examined and evaluated in this presentation are: the Inquiry Learning Model of Information literacy (developed by Trevor Bond (MEdAdmin hons), the SCONUL Seven Pillars Model and the Digital Fluency Model.

The Inquiry Learning Model of Information Literacy (IL) (figure 1.0) is the first Model of Information Literacy which is to be examined in this paper. The principal elements of the Inquiry Learning model are that students list key words and phrases relevant to the task they are required to carry out (http://ictnz.com/sauce-resources/SAUCE-description2.htm). The student then writes key research questions using the key words and phrases which they have selected. This stage in the model is called ‘setting the scene’. The student then selects and acquires the information relevant to his/her research questions. This also involves illuminating irrelevant information. The student then validates the information he/she has acquired and utilizes it in tasks and subtasks which he/she needs to complete in order to answer his/her research question. Finally, the student then evaluates the information he/she has acquired and evaluates the extent to which his/her research question has been answered
effectively. The model is cyclical and demonstrates that information literacy learning is a continual process.

The SCONUL Seven Pillars of Information Literacy model (figures 1.1 and 1.2) is perhaps the most widely known model of Information Literacy. It was first published in 1999 and has been recently revised in 2011 to reflect the changing information world in which we live. This model defines the core skills and competencies (ability) and attitudes and behaviours (understanding) at the heart of information literacy development in higher education (SCONUL Working Group on Information Literacy, 2011). The key skills and competencies of an information literate person identified in the Seven Pillars Model are: Managing, Evaluating, Presenting, Gathering, Identifying, Planning, and finally Scoping Information. The main attitudes and behaviours of an Information Literate person identified in the Seven Pillars Model are: understanding the gaps in his/her personal knowledge; developing a learning habit so new information is being actively sought all the time; the ability to use different search tools, while recognising the disadvantages and advantages of different search tools and understanding the value of controlled vocabularies and taxonomies in searching.

I would make one addition to the above list of attributes of an information literate person and suggest that the understanding of folksonomies should be added here, as folksonomies are playing an increasingly important role in the library & information studies sector.

In the 1999 Seven Pillars Model, ‘the first strand describes a competent student who is able to function effectively as part of the academic community in terms of basic library and IT skills’ (Gavin, C. (2008). p. 45). The second aspect of the 1999 SCONFUL Model is defined as information skills, such as awareness and understanding of the way in which information is produced and critical appraisal of the content and validity of information (ibid). The main differences between The 1999 Seven Pillars of Information Literacy and the 2011 Seven Pillars Model of Information Literacy.

Like the earlier Inquiry Learning Model of Information Literacy, the circular nature of the 2011 Seven Pillars Model demonstrates that becoming information literate is not a linear process (SCONUL Working Group on Information Literacy. (2011). P 4.) This particular model of IL thus is best suited for the Holistic Learner who ‘approaches problems globally and ...would probably prefer to freely examine the system or resource to be learned on their own in order to figure out how it works’ (Grassian, E and Kaplowitz, J. (2001).p. 63). The 1999 Seven Pillars of Information Literacy was, in my opinion, best suited to the ‘serialist learner’, a learner who typically prefers to ‘work through tasks incrementally, preferring to work through problems step by step’ (ibid).

The Digital Fluency Model of Information Literacy (DIF) (figure 1.3) focuses, as the name might suggest, specifically on non-print forms of information, such as websites and blogs. Digital Information fluency is described as ‘the ability to find, evaluate and use digital information effectively, efficiently and ethically
Digital Fluency, or digital literacy, may also be defined as “the ability to appreciate the potential of ICT to support innovation, industrial, business and creative processes (Ministry of Education, 2003). p. 5 in Madigan, D. & Martin, A. (2006). p. 19). The Digital Information Fluency Model was developed in 2001 when the Science and Mathematics Academy of Illinois embarked on the 21st Century Information Fluency Project.

The Science and Mathematics Academy of Illinois received US Department of Education to research and develop training in the largely unexplored field of online information literacy (http://21cif.com/resources/difcore/). The developers of the Digital Information Fluency Model attest that Digital Literacy is not as broad a concept as Information Literacy and includes aspects of both Information Literacy and Technology Literacy (http://21cif.com/resources/difcore/). According to David Bawden in his chapter in Digital Literacies Concepts, Policies and Practices (Knobel Michele, Lankshear, Colin (2008)) , there are a plethora of conceptions of Digital Literacy (Bawden.(2008) in Digital Literacies Concepts, Policies and Practices, p. 4). Concepts of digital literacy range from those that centre on mastery of ideas and insist on careful evaluation of information and intelligent analysis and synthesis, to those that provide lists of specific skills and techniques that are seen as necessary for qualifying as digitally literate (ibid). The Digital Information Fluency Model incorporates the former concept of digital literacy, focusing on the mastery of ideas such as, locating Information efficiently; evaluating information effectively and using information ethically.
Examples of Information Literacy Programmes
Four critical components of an Information Literacy Programme cited by Christine Susan Bruce in her paper entitled ‘Information Literacy as a Catalyst for Educational Change A Background Paper (Bruce, Christine, 2004) in ‘Proceedings “Lifelong learning: Whose Responsibility and what is your contribution?”, the 3rd International Lifelong Learning Conference, pp. 8-19, Yeppoon, Queensland. These are: Resources to facilitate the learning of specific skills; Curriculum that provides the opportunity to learn specific skills, either early in a course or at point of need, Curriculum that requires engagement in learning activities that involve on-going interaction with the information environment and finally, a curriculum that provides opportunities for reflection and documentation of learning (Bruce (2004), p. 14).

One Information Literacy Programme which does not incorporate a specific Model of Information Literacy, such as those cited above, is the Junior Certificate School Progamme (JCSP). I would like to take this opportunity to thank Ms. Kathleen Moran who is the Senior Project Librarian for the JCSP and was very helpful in providing me with information regarding the JCSP. The Junior Certificate School Programme (JCSP) originated in a number of projects initiated by the City of Dublin Vocational Education Committee (CDVEC) through its Curriculum Development Unit (CDU). The projects were concerned with identifying potential early school leavers and devising a programme suitable to their needs (National Council for Curriculum and Assessment (NCCA) (NCCA. (2010). p.5).

While the majority of settings providing the JCSP are post-primary schools, the JCSP is also offered in Special Schools, Children Detention Schools, Traveller Training Centres and Youth Encounter Projects (ibid). The programme offers schools and teachers a more flexible approach than a traditional subject-based curriculum (ibid.) “The JCSP does not incorporate a particular model of Information Literacy into its programme as such models are deemed to be more appropriate to higher levels of information literacy Teaching and Learning.
Maguire

JCSP students are taught basic Information Literacy skills by the programme’s librarians” (Ms. Kathleen Moran, Senior Project Librarian for the JCSP). I also asked Kathleen Moran what role she felt librarians and libraries have to play in facilitating and promoting Information Literacy. Her response was that “The JCSP libraries and librarians have a very significant role to play in teaching, facilitating and promoting information literacy to the JCSP students in their schools. As the teaching of information literacy skills is not a requirement of the Junior Cycle curriculum, most JCSP students in non-library schools receive little or no training in this area. Therefore those students who attend schools with JCSP libraries and librarians have a distinct advantage in this area” (Ms. Kathleen Moran, Senior JCSP Project Librarian, in correspondence with the author, 21 February 2012).

I also asked Ms. Moran whether, as the JCSP Programme operates in in over 240 schools throughout the country, in which areas of the country, or in which schools, did she feel the JCSP has had most impact on the Information Literacy Skills of students who partake in the programme. The answer she gave was: ‘While the JCSP is operational in over 240 schools, only 30 of these have a Project Library and Librarian. While Information Literacy is taught in all of the Library Project Schools, this is not necessarily the case in the non-library JCSP schools. Where Information is taught, there is no difference on student impact across different schools or different areas of the country’ (Ms. Kathleen Moran, Senior JCSP Project Librarian, in correspondence with the author, 21 February, 2012).

There are also Information Literacy Programmes run by the Ballymun Library, Dublin, such as the Junior Book club, the Adult Reading Group and the Citizens Information Centre. Dublin City Public Libraries also provide a four module course on developing web skills: the components of the course include: introducing computer basics to individuals and enabling them to identify particular parts of the computer, accessing the internet and moving between websites and using the internet to buy goods on-line or book flights on line (http://www.dublincity.ie/RecreationandCulture/libraries/Library%20Services/learning_with_your_library/Pages/websmart.aspx.).

Copyright
In a world where increasing emphasis is placed on Information Literacy Skills, where does the role of copyright fit in? I wish to return for a moment to the definition of Digital Fluency which is incorporated in the Digital Information Fluency Model referred to earlier: their definition of Digital Fluency is as follows: ‘the ability to find, evaluate and use digital information effectively and ethically (http://21cif.com/resources/difcore/).’. Incorporated in the Digital Information Fluency Model, therefore, is an awareness and knowledge of copyright.
Probably the first copyright dispute in Ireland took place between St Columba or Colmcille and St Finian in the 6th Century (Hedley, Steve., McGovern, Patricia., O’Neill, Dr. Eoin. (2012). Copyright and Innovation: A Consultation Paper, p. 124). Colmcille had borrowed a Palster and surreptitiously made a copy of it, when Finian found out he demanded the copy (ibid). Colmcille refused and the matter went to arbitration at the court of High King Diarmuid, who decided in favour of St Finian with the famous ruling "To every cow its calf, to every book its copy (http://www.oracleireland.com/Ireland/history/battle-culdema.htm)".

This legend suggests that Ireland was the first country in the world to protect copyright (Hedley, Steve., McGovern, Patricia., O’Neill, Dr. Eoin. (2012). p. 124).

On May 9th 2011, The Minister for Jobs, Enterprise and Innovation, Richard Bruton T.D established the Copyright Review Committee, the purpose of which was to examine the current Copyright legislative framework, in particular the Copyright and Related Acts 2000, to identify any areas of the legislation that might be deemed to create barriers to innovation (http://www.djei.ie/science/ipr/copyright_review_2011.htm). The copyright review committee was established in part due to a perception in certain industries that national copyright legislation does not cater well for the digital environment. (http://www.djei.ie/science/ipr/copyright_review_2011.htm).

The membership of the Committee is Dr Eoin O’Dell (Trinity College Dublin) (Chair), Patricia McGovern (DFMG Solicitors, Dublin), and Prof Steve Hedley (University College Cork).

The copyright review called on submissions for proposed amendments to the current Copyright and Related Acts (CRRA) of 2000, which it received on the 4th July 2011 at a public meeting in Dublin. On foot of the submissions, the review committee published a Consultation Paper. The committee was awaiting further submissions to its consultation paper up until 13th April of this year. Chapter 9 of this consultation paper deals specifically with heritage institutions, including museums, archives and libraries. It was submitted to the Copyright Review Committee that sections 59-70 of the CRRA, which relate to libraries and archives, were not well adapted to the digital age. In particular, it was argued that heritage institutions should be able to make digital reproductions of protected works for archival and preservation purposes (Hedley, S. et al.),(2012). P. 96). Many of the exceptions to copyright in both CRRA and European Union Copyright Directive (EUCD) relate to educational purposes in general, and to heritage institutions in particular (ibid. p 104). Indeed, the terms libraries, archives and museums were substituted in some cases with the term ‘heritage institutions’. For example, one proposed submission, section 69A, which addressed the issue of the display of a protected image to make a presentation to students or others attending and educational event at a public gallery or other heritage institution is as follows:
'A Fair dealing by heritage institutions.

(1) The communication by a heritage institution to individual members of the public of reproductions of works in the permanent collection of the institution, by dedicated terminals on the premises of the institution, shall constitute “fair dealing” for the purposes of section 50(1).

(2) The brief and limited display of a reproduction of an artistic work, during a public lecture in a heritage institution shall constitute “fair dealing” for the purposes of section 50(1).

(3) accompanied by a sufficient acknowledgement’ (ibid, p. 112).

The Copyright Review Consultation paper addresses digital copyright in terms of material which is first made available in the state: Section 198A of the consultation paper reads as follows:

‘198A Digital Copyright Deposit

The publisher of any digital publication first made available in the State after the commencement of this section or, in the case of the authority specified in section 198(1)(a), the publisher of any digital publication made available in the State, shall, within one month of the date on which the digital publication is first made available, deliver, at his or her own expense, copies of the digital publication in the format in which it is published to the Boards and authorities referred to in section 198 (1).’ (ibid. p. 171).

The development of a Council, incorporating a digital copyright exchanged and an alternative dispute resolution service, is one of the possibilities which is explored in the Consultation Paper (ibid, p. 124).

4. Conclusions

According to The Labour Party’s Literacy Policy, one in ten Irish children has serious difficulty with reading and writing, or almost 50,000 primary school pupils. This rises to as many as one in three children in some disadvantaged schools (The Irish Labour Party.(2011). P.3). The Labour Party Literacy Policy lays out how literacy levels will be improved through measures such as specific inductions for teachers, through building on the existing Early Childhood Care and Education Scheme to provide a comprehensive, regularised and universal preschool year, and through providing dedicated funding to stock school libraries (ibid, p. 6). The Irish Labour Party policy on Literacy therefore emphasizes functional literacy, which may be defined as ‘the ability to read and use written information, to write appropriately in a variety of contexts and to recognize numbers and basic mathematical signs and symbols’ (Langford. (1998) in Madigan, D, and Martin, A. (2006). P. 52). The above measures are all worthwhile, yet nowhere in the literacy policy is Information Literacy mentioned. If literacy levels are to be improved, functional literacy must be taught in tandem with Information
Literacy.

References


Webography

http://21cif.com/resources/difcore/
http://www.labour.ie/policy/listing/1297246215288358.html
Croatian and Irish public libraries on Facebook

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² Library of Faculty of Humanities and Social Sciences, University of Zagreb

Abstract: Since its launch in 2004, Facebook has become one of the world’s most popular social networking sites. Its usage has increased significantly – that is the reason why libraries often use the network in promoting their activities. In the paper a short literature review is given (e. g. articles written by Jacobson (2011); Bencec (2011) and some others). After the review, results of a study of Croatian and Irish public libraries on Facebook are presented and conclusions are made. Facebook pages of all Croatian and Irish libraries are analyzed showing the main trends in using Facebook as well as libraries’ interaction with their users (fans). The results will show libraries’ and fans’ activities and will indicate what public libraries in both countries could do to enhance library promotion on Facebook.

Keywords: Croatia, Facebook, Ireland, public libraries, social networking

1. Introduction

Facebook, as the most popular social networking site in the world with more than 800 million of users (Facebook statistics, 2012), has made the tremendous influence on communication. Except individual Facebook users, many institutions and firms have recognized its value in promoting their activities or products. Since 2007, many libraries have decided to use Facebook to improve communication with their patrons.

Certain number of surveys has been done to find out about the habits of libraries and their patrons on Facebook. The aim and purpose of our study is to compare Facebook presence of public libraries in Croatia and Ireland, and to see whether there is a difference in the way those libraries use Facebook to communicate an collaborate with their patrons.

2. Literature Review

Facebook was primarily intended for student use; subsequently many libraries have recognized the value of Facebook in communicating with students. There are numerous articles that discuss and analyse use of Facebook in academic libraries (see Connel, 2009; Chu et al., 2008; Calvi et al., 2010; Hendrix et al.,
But, library literature relating to Facebook use in public libraries has a limited range. Jacobson (2011) lists five categories that all articles fit in. The first and the most popular type of literature are “how-to” based articles. The category does not only include descriptions of the best practices, but also ideas for the use of Facebook in libraries. The second type of library literature is discussions about individual library experiences using Facebook in a variety of outreach and marketing levels. Jacobson concludes that none of the surveys of this category can actually evaluate its effectiveness. Jacobson continues with the third category of Facebook literature, i.e. student-based research. Those articles examine the effectiveness of Facebook as an outreach tool through student perspective. Another type of literature is the analysis of a particular Facebook-based service that a library is attempting to provide. Finally, the last subset of literature is the perceived-use studies that ask librarians about their libraries use of Facebook. Oppose to those five categories, Bencec (2011) lists three categories of literature on libraries’ Facebook usage. In her unpublished study on Croatian libraries on Facebook, she explicitly talks about the following categories: library perspective on Facebook use in libraries, user perspective on Facebook use in libraries and Facebook content analysis. Comparing these two category-sets, we can implement Jacobson’s five categories into Bencec’s set of three categories. Three of Jacobson’s categories (“how-to” based literature, outreach and marketing levels of Facebook use in libraries and service-provided analysis) can be seen as Bencec’s category of articles on library perspective. Jacobson’s category of student-based researches evidently corresponds to Bencec’s category of user-perspective analysis. Finally, Jacobson’s perceived-use study and Bencec’s content analysis can be put as the same category of Facebook literature.

As said before, the most popular type of public library literature on Facebook is the “how-to” based type of literature. There are numerous articles suggesting and explaining the ways to implement Facebook in libraries’ communication patterns with their patrons (King, 2011; Rethlefsen, 2010; Cahil, 2009, 2011…). Special subset of “how-to” literature are articles on “how-to” use Facebook in relation to teen users (Howard at al., 2008; Jennings et al., 2008; Peowski Horn, 2011), as a very delicate group of users because children and teens use Facebook most frequently but their privacy and rights are to be guarded the most.

Three articles are important for our survey. All three can be put into the third category of Facebook literature, i.e. content analysis. In her article about Facebook use in Pennsylvania public libraries, Burgdorfer (2011) concludes that status updates is the most used manner of communicating with the patrons, but low number of users comments indicates that communication on Facebook is mainly one way street. Calvi (2010) conducted a content analysis of 12 university libraries’ Facebook profiles, and despite the fact that this article is about academic libraries; it is a indicator that libraries users are not very keen to interact. As Calvi says, very few are the posting by fans. Bencec’s (2011) survey on Croatian libraries on Facebook gives general idea of how Croatian libraries use Facebook for interacting with their patrons, since this survey
included all types of libraries. According to the survey, in June 2011, 93 Croatian libraries had 99 presences on Facebook (51 Facebook profiles, 36 Facebook pages and 12 Facebook groups). Public libraries were the most common library type on Facebook (54.8% of all Croatian libraries on Facebook).

3. Methodology and Sample
In the changing times social networking takes an important place in both our private and professional lives. Libraries, as social, cultural and educational institutions, have to meet their users wherever they are. And Facebook is definitely very important place where library users (and potential users) “live”. In the centre of our interest are Croatian and Irish public libraries and their presence on one of the world’s most popular social networks. The two European countries are of a similar size (population of Croatia is 4.3 million according to the 2011 census and population of Ireland in the same year is 4.6 million). If we analyse Facebook statistics for both countries, we can see that there are about 1.5 million Facebook users in Croatia (32.4% of population) comparing to about 2 million Facebook users in Ireland (45.3% of population). 64.8% of Croatian internet users use Facebook (Croatia Facebook statistics, 2012) and 68.8% of Irish internet users use Facebook (Ireland Facebook statistics, 2012). Our intention in the survey was to compare public libraries’ usage of Facebook in communicating with their users.

The first step in our survey was making lists of all Croatian and Irish public libraries that have any activity on Facebook. According to the Croatia Bureau of Statistics, there are 257 public libraries in Croatia (Croatia in Figures, 2011). Some of the libraries have branches (e.g. Zagreb Public Libraries have 27 branches) so the total number of libraries with branches is near 300. Facebook page Croatian libraries on Facebook helped us in detecting libraries’ presence on the network. We found out that 64 of Croatian public libraries are on the Facebook. Libraries, as public institutions, should use Facebook pages to present their activities and to communicate with their users. Not all of Croatian libraries are aware of it – 29 Croatian public libraries use Facebook pages, but 30 libraries use Facebook profiles and 5 libraries present their activities through Facebook groups. As Facebook profiles are personal, intended to be used only by individuals, we excluded the 30 libraries with profiles from our survey. We also excluded Facebook groups as they are also not appropriate way for libraries to present themselves (although they are maybe appropriate for presenting specific library activities that are interesting to a smaller number of users). At the end of Facebook presence analysis, our Croatian sample consisted of 29 libraries.

The basis for Irish sample was the list of Irish public libraries available on the web portal Libraries.ie. After analysing web sites of all Irish public libraries, we found out that there are 32 central public libraries (library services) in Ireland with the total of 321 branches. Searching the Facebook resulted in finding out that 21 out of 32 central public libraries in Ireland have Facebook
pages. There are no Irish libraries presented on Facebook through profiles or
groups. The Irish sample for our survey consisted of 21 libraries.
The 29 Croatian and 21 Irish public libraries with Facebook pages on the 1st of
December 2011 is the absolute sample.
Facebook pages of all the 50 libraries were analyzed, and three categories of
data were gathered:
1. metrics (number of Likes, Talking about this and Were there)
2. users’ activities - what libraries allow their users to do on Facebook
   pages and which of the opportunities users really use (accessing the
   pages, posting on the Wall, adding photos, tagging photos, adding
   links, adding videos)
3. libraries’ activities - which possibilities libraries use (how many tabs,
   how many photos, notes, events, posts, which tab is default lending tab,
   are fans’ posts shown)

Our analysis was made on the 1st of December 2011. We analysed all the
content for all the categories except wall posts – number of wall posts was
counted for the last two months, October and November 2011 because in some
cases it would be impossible to count all the wall posts.

4. Survey Results

Metrics
Total number of Likes to all the 50 libraries is 13634. Croatian libraries have
8361 Likes and Irish libraries have 5273 Likes.
Talking about this number, firstly introduced in October 2011, is pulled from
interactions that occur on Facebook over the past seven days. The number is
updated daily. The situation on the 1st of December 2011 shows that there were
556 Facebook users “talking about” Croatian and Irish libraries – 326 about
Croatian and 230 about Irish libraries. As number of Likes to Croatian libraries
is higher, it was expected that the Talking about this metrics would be higher.
Were here feature on Facebook pages represents how many check-ins and
mobile device location shares a library has accrued ever. As the possibility of
location shares is rather new, the Were here number was not expected to be
high. Total number of location shares is 172 – 170 for Croatian and 2 for Irish
public libraries.

<table>
<thead>
<tr>
<th></th>
<th>Like</th>
<th>Talking about this</th>
<th>Were here</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>total no.</td>
<td>average</td>
<td>total no.</td>
</tr>
<tr>
<td>Croatia</td>
<td>8361</td>
<td>288.3</td>
<td>326</td>
</tr>
<tr>
<td>Ireland</td>
<td>5273</td>
<td>251.1</td>
<td>230</td>
</tr>
<tr>
<td>Total</td>
<td>13634</td>
<td>272.7</td>
<td>556</td>
</tr>
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</table>

Users’ activities provided by libraries
Libraries on their Facebook pages may offer some features that can facilitate
fans’ communication with the library – posting on the library’s Wall, adding
links, photos, videos, tagging photos. Libraries could also have access
restrictions - pages could be opened to anyone or only to Facebook users, i. e. persons older than thirteen years of age (Table 2). We wanted to find out which of the features Croatian and Irish libraries offer to their fans. We also counted the number of posts to each feature in the last two months (October and November 2011). The results show that library fans do not use very often features provided by libraries. Total number of all the posts posted by fans during the two-month period is 84 – 18 from Croatian libraries’ fans and 66 from Irish libraries’ fans. If we analyse posts to each feature, we can see that the most commonly offered feature is posting to the Wall – 43 libraries offer that possibility to their Facebook fans (26 Croatian and 17 Irish libraries). Nevertheless, fans of only 9 Croatian and of 14 Irish libraries had used the possibility during the two months and the total number of wall posts is 41 (28 Irish and 13 Croatian).

Table 2. Number of libraries that allow their fans to post on the Wall, to add photos, links and videos

<table>
<thead>
<tr>
<th></th>
<th>Croatia</th>
<th>Ireland</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall posts</td>
<td>26</td>
<td>17</td>
<td>43</td>
</tr>
<tr>
<td>Photos</td>
<td>21</td>
<td>11</td>
<td>32</td>
</tr>
<tr>
<td>Links</td>
<td>23</td>
<td>2</td>
<td>25</td>
</tr>
<tr>
<td>Videos</td>
<td>21</td>
<td>2</td>
<td>23</td>
</tr>
</tbody>
</table>

The possibility for fans to add photos on library’s Facebook page is offered by 32 libraries (21 Croatian and 11 Irish) but only fans of 5 libraries (4 Irish and one Croatian) had used the possibility during the two months period. Total number of photos added by fans in the period is 11 – one for Croatian libraries, 10 for Irish libraries. Possibility of tagging photos (either those added by libraries or those added by fans) is offered by 7 Croatian libraries and none of the Irish libraries.

Adding links is offered by 23 Croatian and 2 Irish libraries. We have to notice that some fans post links through their wall posts, so the total number of posted links (either through “add link” feature or on the walls) is 32 – 28 posted by Irish libraries’ fans and four posted by Croatian libraries’ fans. It is interesting that more Croatian libraries offer the link feature but more Irish fans actually add or post links to the library pages.

Fans of 21 Croatian and 2 Irish libraries can add videos to their libraries’ Facebook pages but no one had done so during the two months period. Table 3 shows the number of posts by fans to the Wall, number of added photos, links and videos by libraries’ fans in October and November 2011.

Table 3. Number of posts by fans to each tab in October and November 2011

<table>
<thead>
<tr>
<th></th>
<th>Croatia</th>
<th>Ireland</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall posts</td>
<td>13</td>
<td>28</td>
<td>41</td>
</tr>
<tr>
<td>Photos</td>
<td>1</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Links</td>
<td>4</td>
<td>28</td>
<td>32</td>
</tr>
</tbody>
</table>
Croatian libraries offer more features to their fans than Irish libraries do, but Irish fans use posting possibilities more often. Wall posts are the most interesting feature for library fans and the least popular are videos - fans do not post videos on libraries Facebook pages at all.

**Libraries’ activities**

By analyzing libraries’ activities, we wanted to find out which tabs and how many tabs libraries offer (Wall, Info, Photos, Notes, Events, Questions and other, added, tabs); which tab is default lending tab and whether fans’ posts are shown immediately after opening library’s Wall. We also counted the number of posts in each tab (number of wall posts were counted for the last two months, and for other tabs the total number was counted).

All the libraries have Walls, although 8 Croatian and 2 Irish libraries had not posted any posts in the two month period. Total number of posts on the libraries’ Walls is 1632 (652 on Croatian libraries’ pages, 980 on Irish libraries’ pages).

All the libraries also have Photo tabs and all the libraries had published at least one photo. Total number of published photos is 5197 (3121 on Croatian libraries’ pages, 2076 on Irish libraries’ pages). The highest number of published photos is by an Irish library – 606 photos.

Info tabs are offered by 45 libraries (2 Irish and 3 Croatian libraries do not publish basic information - address, contacts and opening hours).

Fourteen Croatian and 7 Irish libraries offer Event tabs. Total number of announced events is 855 (668 by Croatian and 187 by Irish libraries). Link tabs are offered by 7 Croatian and 6 Irish libraries but the number of links can not be counted because only the last ten links are shown. Notes tabs are offered by 9 libraries, 7 Croatian and two Irish libraries. Total number of published notes is 468 – 232 by Croatian libraries, 236 by Irish libraries. One Irish and 5 Croatian libraries offer Video tabs. Total number of published videos is 11 – ten by Croatian libraries and one by an Irish library.

Question tabs are offered by one Croatian and 2 Irish libraries but only two questions are published (one by Croatian and one by Irish library). Eleven libraries (4 Croatian and 7 Irish) added other tabs to their Facebook pages. Table 4 shows number of tabs on Facebook pages of Croatian and Irish public libraries.

Default lending tab for 46 libraries is Wall (28 Croatian and 18 Irish), for 3 libraries Info (1 Croatian and 2 Irish), and one Irish library has an added application as default lending tab (Wellcome).

Table 4. Number of Croatian and Irish public libraries’ Facebook pages offering each tab

<table>
<thead>
<tr>
<th></th>
<th>Croatia</th>
<th>Ireland</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall</td>
<td>29</td>
<td>21</td>
<td>50</td>
</tr>
<tr>
<td>Photos</td>
<td>29</td>
<td>21</td>
<td>50</td>
</tr>
</tbody>
</table>
As the above results show, Wall is the most commonly used tab. Small number of libraries do not allow their fans to post to their Walls (7 libraries). Those who do not allow posting on the Wall do not allow adding photos, links or videos either. However, 27 libraries (16 Croatian and 11 Irish) had decided to show only library posts when the Wall tab is opened. Fan posts to those libraries’ Walls can be seen by choosing Everyone (most recent) or Everyone (top posts) options.

Table 5 shows the number of published items per tab on Croatian and Irish libraries’ Facebook pages. Number of wall posts refers to October and November 2011, other numbers are total.

Table 5. Number of published items per each tab on Croatian and Irish libraries’ Facebook pages

<table>
<thead>
<tr>
<th></th>
<th>Croatia</th>
<th>Ireland</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photos</td>
<td>3121</td>
<td>2076</td>
<td>5197</td>
</tr>
<tr>
<td>Wall</td>
<td>652</td>
<td>980</td>
<td>1632</td>
</tr>
<tr>
<td>Events</td>
<td>668</td>
<td>187</td>
<td>855</td>
</tr>
<tr>
<td>Notes</td>
<td>232</td>
<td>236</td>
<td>468</td>
</tr>
<tr>
<td>Videos</td>
<td>5</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Questions</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4679</strong></td>
<td><strong>3481</strong></td>
<td><strong>8160</strong></td>
</tr>
</tbody>
</table>

5. Conclusions

Croatia and Ireland are countries with similar number of inhabitants and with similar number of public libraries. Public library services are organized differently, so the number of Irish central libraries is much lower but the number of branch libraries is higher. Good policy of all the analyzed libraries is that they make Facebook pages only for central libraries, not for the branches. Those are the reasons why the highest possible number of Irish libraries’ Facebook pages is much lower (32) than Croatian (257). However, at the moment, the number of public libraries that have Facebook pages is similar (21 Irish and 29 Croatian).

One problem of some Croatian public libraries is that they use Facebook profiles or groups. Those libraries were excluded from our survey and our recommendation for them is to start using Facebook pages.

Croatian libraries on Facebook have higher number of fans; they also have more fans who are talking about this, and more fans that were here. Croatian libraries
most commonly allow their fans to post on the Wall, to add photos, links and videos. Number of wall posts by fans, number of added photos, links and videos are higher for Irish libraries. So, we can see that fans of Croatian libraries on Facebook have more possibilities, but take advantage of less. That means that more possibilities offered by libraries to their Facebook fans does not necessarily mean better fans’ interaction.

All the Croatian and all the Irish libraries use Wall and Photo tabs. There are more photos added by Croatian than by Irish libraries, but there are more wall posts added by Irish than by Croatian libraries. Info tab is also commonly used. More Croatian libraries use Events tab to announce upcoming events. The number of notes in Notes tab is almost the same for Croatian and Irish libraries. The other tabs (Videos, Questions and added tabs) are not very popular either in Croatian or in Irish libraries on Facebook.

We can conclude that quantity of activities of Croatian and Irish libraries on Facebook is similar. The libraries choose different ways of communication, and that is one of the advantages of Facebook – it offers numerous possibilities and page administrators’ can choose and use whichever they think are the most appropriate for reaching their library users (or potential users). Libraries with better Facebook activity will have higher number of fans and that generates a higher return in terms of fans’ involvement. So, the only way for a library to profit from Facebook is to be active by posting interesting links, stories, photos, videos and by using numerous applications, encouraging their fans to interact.

References


Supporting the Unmet Information Needs of Australian Men Experiencing Stressful Life Events. A Social Justice Imperative

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Abstract: This paper reports qualitative research that investigated strategies for more effective delivery of information to support the health outcomes and community engagement of Australian men, a group who have poor health outcomes and high suicide rates. Based on the research findings this paper will discuss the social justice imperative that Australian librarians enhance their commitment to the delivery of information in the world of the everyday.

Keywords: Information seeking; information literacy; men; human information behaviour; qualitative studies; sense-making; everyday life information.

1. Introduction

Men die in Australia, on average, at 77.8 years, six years younger than the 83.9 years for women (Australian Bureau of Statistics, 2010b). Compared with women, men in most age groups have higher mortality rates for stroke, diabetes, cancers, ischaemic heart disease, bronchitis, emphysema, injury, poisoning, accidents and drug dependence (Verrinder & Denner, 2000). Studies both in Australia and overseas have shown that men in countries with a dominant Anglo culture are also more likely than women to have unhealthy lifestyles, drink and smoke excessively, eat a less healthy diet and engage in risk-taking and/or aggressive activities that affect their health outcomes (Connell, 1995; Griffiths, 1996).

While the statistics for general health outcomes for Australian men are poor, statistics for male suicide, compared to women, are also of considerable concern. The Australian Bureau of Statistics shows that throughout the period 1998 to 2007 the male age-standardised suicide death rate was approximately four times higher than the corresponding female rate: 13.9 per 100,000 standard population compared with 4.0 per 100,000 for women (Australian Bureau of Statistics, 2010a). The role of relationship breakdown as a factor in the high rates of suicide for men in the 25-44 age group has been suggested by a number of studies (Baume, Cantor, & McTaggart, 1998; Cantor & Slator, 1995). The risk of suicide in men post separation is of particular concern when the issue is
considered in light of the occurrence of far higher female initiated separation in Australia (Headley, 2006).

Notwithstanding these obvious poor physical and mental health outcomes, research also shows that Australian men are reluctant to seek help during stressful life events and face particular barriers in accessing information and support at such times, and across the lifespan more generally (Australia. Department of Health and Ageing, 2009; Connell, 1999). This research is, fundamentally, an investigation of the information literacy of Australian men.

Many women have been surprised that this research was undertaken given, what appears to be, the superior position of men in Australian society. To say that some are hostile to this avenue of research is somewhat of an understatement. But it was and continues to be the view of this researcher that the statistics speak for themselves, and that solving this problem, and supporting the health and wellbeing of Australian men by the delivery of appropriate information and support is a social justice imperative. If men are the dominant force in Australian society and large numbers of them are mentally or physically ill then a reasonable correlation would be to suggest that the society as a whole is not well placed to be healthy.

When beginning this research it was of particular concern that those seeking to support the health and wellbeing of Australian men by providing information products and allied services are not trained to do so, and this information product development and service delivery is largely ineffective. In most of community agencies in Australia this work is undertaken by a range of other non-library professionals, para-professionals, and volunteers including; nurses, social workers, community psychologists, group workers, welfare workers and volunteers from a range of backgrounds. These agencies are largely supported by cyclical government funding and public donations and are consequently under resourced in a wide range of domains, including information delivery strategies. The terms “information literacy” and “human information behaviour” are largely unknown in these organisations, and information product development and delivery practices take no account of it.

The researcher’s experience working within such agencies has shown that in Australia there has been little critique, or evaluation, of the relevance of the library and information professionals to support the information needs of the community within the world of the everyday. Internationally this work has been undertaken over many decades by the eminent scholars Brenda Dervin and Edwina Chatman. Continuing this tradition, further research to examine and critique information needs and use in non-library settings has also been conducted in the USA and Canada (Fisher, Erdelez, & McKechnie, 2005; Harris & Dewdney, 1994; Information School of Washington, 2012; McKechnie, Baker, Greenwood, & Julien, 2002, McKechnie & Pettigrew, 2002). Other studies have been conducted in Scandinavia (Palsdottir, 2005; Savolainen, 1995) but in Australia there has not been any significant investment in this line of enquiry.
The research investigation reported here revealed that there is a lack of statistical data about the work roles of librarians supporting the provision of everyday life information at the state or national level in Australia, either in libraries or elsewhere. There are also very clear indications that there has been a significant shift away from the provision of everyday life information by the library and information profession in Australia since the 1980s.

Although realizing particular concerns about the access to adequate information by men experiencing stress or duress in their lives, this research was also an attempt to reinvigorate a conversation about the significant role that Australian library professionals (and libraries more broadly) can play in the important work of delivery of everyday life information (Wellstead, 2010). It was also an attempt to reengage the profession with the social justice frameworks which were foundational elements of the development of public library movement.

2. Method and Scope

The research consists of a qualitative study which had as its core a narrative study of the information behaviour of a group of Australian men who identified themselves as having a stressful life event for which they needed information and support. A smaller narrative study of a group of professionals who support men experiencing stress was also conducted.

“Sense-making” was chosen as the research method. “Sense-making” is a highly regarded tool for investigating human information behaviour. This method calls on many of the other qualitative research methods for process but its ultimate strength for this project was the capacity for the participants to ‘tell their stories’ in a way which made sense for them rather than responding to predetermined parameters. Sense-making also seeks to critique human situations by examining gaps and barriers across time and space which are encountered when accessing information (Dervin, 1983/2000).

Participants for the study were recruited using an email broadcast from a community based agency in Western Australia that is funded support people who are experiencing stressful live events. Recipients were also asked to forward the email to others who might be interested in the study.

Initially 27 men responded to the call about the project. When provided with further information 10 of these did not respond again and 17 men opted into the research. Two of these opted out on the day of the interview citing pressure of work. Attempts to reinstate these interviews were not successful.

Data was initially gathered from the men using a short demographic questionnaire. A sense-making interview was the secondary component of the study. In the final stage the men were provided with a take home self-completion sheet to allow them to share more personal reflections on their information behaviour in terms of social connectivity and friendship networks.

Demographic data collected from the fifteen men revealed a wide range backgrounds and life experience (see Table 1).
Wellstead

The age range of the men was 32-63.

Educational level: Varied across a range from completing Year 10 (leaving school age 15) to post-graduate university qualifications.

Place of residence: Varied across a range from outer urban/semi-rural to inner city.

Employment status: Varied across a range from casual work, home duties, public service, professional, to owning a business.

Number of children: Only one of the participants did not have children.

Employment: No men were currently working in blue collar industries, although a number had done so in the past.

Relationships 1: Only three of the fifteen participants identified having had only one partner during his adult life; two of these relationships were no longer intact (so the men were single again) and the third had separated and reunited.

Relationships 2: Four of the men had been married or partnered three times or more. [Note: the term partner was used to identify significant relationship bonds; casual “dating type” relationships were excluded].

<table>
<thead>
<tr>
<th>Table 1: Demographics of help-seeking men</th>
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<td>Age</td>
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<td>Relationships 1</td>
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<td>Relationships 2</td>
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</table>

The men indicated that they had previously needed information to navigate a variety of life situations (see Table 2).

| Participant 1 | Relationship breakdown, custody issues |
| Participant 2 | Relationship breakdown, custody issues |
| Participant 3 | Relationship breakdown |
| Participant 4 | Relationship breakdown |
| Participant 5 | Relationship breakdown, custody issues |
| Participant 6 | Relationship breakdown, custody issues |
| Participant 7 | Wife’s alcohol addiction |
| Participant 8 | Custody issues |
| Participant 9 | Alcohol addiction |
| Participant 10 | Death of young wife, support with care of 2-year old son |
| Participant 11 | Relationship issues |
| Participant 12 | Tried to kill himself twice |
| Participant 13 | Life threatening illness |
| Participant 14 | Move to Australia to enhance wife’s career by becoming principal parent; lack of social and emotional support |
| Participant 15 | Relationship breakdown |

Table 2: Issues for which the men needed help

The interviews took between 45 and 90 minutes. The interview collected data on the use of formal information and support services, as well as use of informal networks such as family, friends and colleagues. It also sought data on use of
information things such as books, pamphlets and websites and awareness of public information campaigns such as television advertising and billboards which seek to alert the community to sources of information and help.

3. Results
The men demonstrated a range of information behaviour during their help seeking episode but there were, however, common themes:
1. They were resistant to early information gathering and prefer to act autonomously;
2. They were not generally aware of the information or supports and services available in the community to assist them to enhance their wellbeing when under stress, or more habitually;
3. They reported that women provided a pivotal role in facilitating their information use and supporting them into help, and in encouraging them to adopt more positive behaviour which will enhance wellbeing. The men also perceive that women receive more help during periods of life stress and across the life span more generally;
4. They used family and friends as principal sources of information, help and support, and that information things such as books and supportive articles in printed media were also important sources of information. They were often directed to these information things by family and friends, often women;
5. They reported that privacy and credibility, both perceptions of their own and that of the source of the information, were key determinants of the decision to seek information and support;
6. They want information and support provided in particularly “masculine” ways and perceived that the increasing feminisation of the helping professions had led to an anti-male bias in support options;
7. As yet the Internet is not generally a credible source of supportive information. Nor are social marketing campaigns effective tools for information delivery (notwithstanding the wholesale use of the method of information delivery by government and community agencies); and
8. They believe men need to ask more of each other in terms of their behaviour and personal accountability to ensure the health and wellbeing of themselves, their families, and their communities. The need to support younger men in this endeavour was strongly felt.

The professionals who took part in the research largely agreed that these were familiar themes for the men to whom they offer help and support and could, therefore, be broadly extrapolated to Australian men at large.

What was also clear from the narrative of the help seeking men and the professionals is that the timing of information delivery is of utmost importance during a help seeking episode. It is clear that there is a significant period of denial and avoidance of information, as well as periods of regression and
stagnation once information seeking has begun. During these times many men are either doing nothing to change their situation, or are trying to work things out for themselves. For some of the men this was anecdotally called the “I don’t want to talk about it” or “stop having a go at me” phase. The professionals interviewed also agreed that this phase can be protracted for many men and is a major obstacle to early information seeking and obtaining timely support. This phase is an important component of the help seeking experience and needs to be accounted for when attempting to provide information and support to Australian men.

The key finding of the research is that Australian men face particular challenges in terms of their information literacy, especially as it relates to obtaining information and support during periods of life stress. It was also clearly identified that men rely heavily on women during these help seeking episodes.

Questions arise as a result of these findings: what sort of information literacy training do Australian men need, who is best to provide it, where and how. If we live in the “information age” why is information difficult to obtain for some groups in society, and why are library professionals largely seen as irrelevant in the quest to locate information to support the world of the everyday for many of these groups.

4. Conclusions

Statistical data show that Australian men have markedly poorer health than women, and commit suicide at 4-5 times the rate of females. In order for Australian society to be functional and positive it needs its men to be well.

Given the reports of those who took part in this research Australian men are an underserved population in terms of information delivery, especially during periods of stress and ill health. Taking into account the views and opinions of both the help-seeking men and professionals in this study would go someway to addressing this unmet need. Participants have provided clear action orientated ideas for ways that information could be provided to men in ways that would better meet their needs and lead to more equity in terms of service delivery and support. There are perceptions that women receive more help than men during periods of stress or ill health, and services are set to up to more readily take account of women’s needs. If this is indeed the case, and the professionals agreed that it is, it raises serious concerns in terms of justice, equity and fairness within Australian society. “A socially-just society is one in which individuals and groups are treated fairly and enjoy an equal share in that society’s benefits” (Rioux, 2010, p. 11) and it goes without saying that this must be all the more the case when access impacts on health and wellbeing.

As with so many things in our profession the decision to use or not use our services is often a case of perception; both that held by our clients (and potential clients) about us, and those we hold about them. Scholars in the field of everyday life information have been airing these concerns for many years. As early as 1977 Brenda Dervin whose sense-making theory forms the
methodological centre of this research, suggested that there are serious implications for the library and information profession if it continued to see itself in terms of a normative view of information and service (Dervin, 1977).

Ten years later, when attempting to draw attention to the narrow “library based” focus of our profession in Australia a leading academic librarian wrote:

By failing to become involved in our society and its vital needs our profession is abrogating its responsibilities. In fact one could argue that no librarian is in any real position to question involvement in the critical social issues of the day because by the very nature of our professional calling one is bound to be implicated anyway (Henderson, 1988, p. 107).

Instead of library and information practitioners and researchers “acting within the ivory tower role [e.g. we know what you need], they should form true partnerships with information user groups in order to bring about positive change and empowerment” (Rioux, 2010, p. 14). These values are driven by a concept of social justice as a normative tool. It is important that library and information science educators, researchers and practitioners discover ways to expand curricula, theories and practices in order to achieve this end. As an example, further research and enhanced praxis is needed on how to improve the information literacy of Australian men, especially when they are experiencing stress or duress. Narrative studies present considerable opportunities to enhance our understanding of the “information worlds” of both users and non-users of libraries and other information gathering places. With these data we can design curricula which train our practitioners adequately, and develop services to meet real needs. This is a social justice imperative in a world with an increasingly dynamic information environment.

So what are action orientated social justice related activities librarians can develop in order to better engage with the social justice dimensions of our professional mandate? As a first priority developing an understanding of the variety of information exchange relationships that are operant in different sections of the community, particularly as they relate to help seeking, librarians can better support community agencies to develop information delivery strategies that engage these diverse groups, including men. Building partnerships with these agencies in order to share the knowledge base of our profession is paramount in order to achieve high quality information product development and service delivery. Enhancing this knowledge base was the key intent of the research reported in this paper, using the premise that information is not an end in itself but rather a tool which must be acted upon to achieve personal and community change. It is this social change that should be at the core of our service delivery; we should be attempting to meet the information needs of those who do not currently use our services by outreach, partnerships and rebranding; perceptions need to be changed, and barriers removed.

It is the central premise of this research that the effective delivery and acquisition of information is a significant component of any call to a social
justice agenda. The researcher believes like other writers “that the acquisition of information can have implications for human dignity, for confidence and self help [and that] information helps tackle tyranny of the articulate over the inarticulate” Martin, 1982, p. 136). The men who took part in this research were unanimous in their agreement that they were inarticulate in regards to their information needs, and their lives were diminished by this. There is clearly a social justice imperative in providing adequate information to men to improve their health and wellbeing.

In the Australian context librarians and information professionals have a considerable role to play in this endeavour. We must embrace again the provision of everyday life information in our libraries, we must market our skills in other domains, and engage the community with the worth of information literacy for all, but particularly in those groups where we see unmet need. It is not enough to offer services to those who seek us out, we must again become advocates for our “non-users” and attempt to address their needs.

And we must engage our students in this endeavour. We who are educators must recognize the narrow boundaries that shape the way knowledge of our professional roles are shared our recruitment of students and our teaching, and our complicity in this process. When we address this attitude we will allow our pedagogy to be radically changed in order to give our students what they desire and deserve (Hooks, 1994, p. 44). If your teaching is dynamic and client focused, our libraries and information services will be dynamic and client focused and better able to meet the challenges that confront us in terms of providing information in ways that are equitable and just, in libraries and elsewhere. This style of information delivery has the power to transform lives and there can be no greater pursuit for our profession.

References


An Investigation of the Role of an On-Site Library in the Provision of Adjunct Bibliotherapeutic Treatment for Emotionally Disturbed Youth

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Abstract: Using a mixed methods approach, this three-phase research study will investigate the role of a professionally staffed, on-site library in the treatment of emotionally disturbed children and adolescents who are residents of an intermediate care in-patient treatment facility in Upstate New York, U.S.A. At the present time, there are no professionally staffed libraries in any such facility in New York State so this three-phase exploratory study aims to fill some gaps in the extant research on the use of bibliotherapy, and the use of library resources and services by mental health care staff, teachers, and patients in such facilities. Keywords: bibliotherapy, emotionally disturbed children, mental health treatment

1. Introduction

The research will investigate the role of a professionally staffed, on-site library in the treatment of emotionally disturbed children and adolescents who are residents of an intermediate care in-patient treatment facility in Upstate New York, U.S.A. The study will also investigate the use of bibliotherapy as an adjunct treatment and the role of the library (and librarian) in the provision of this treatment. At the present time, there are no professionally staffed libraries in any such facility in New York State so this three-phase exploratory study aims to fill some gaps in the extant research on the use of bibliotherapy, and the use of library resources and services by mental health care staff, teachers, and patients in such facilities.

Using a mixed-methods approach, the study seeks to answer the following six research questions:

1. What is the awareness and/or perception of bibliotherapy (BT) among the mental healthcare providers and teachers at the Western New York
2. Theoretical Framework: Bibliotherapy

Bibliotherapy, also called book therapy, has been an informal part of mental health treatment since the institutionalization of mental health care in the early-mid 1800s. In their respective reviews, Fanner and Urquhart (2008) and Brewster (2009) note the long history of libraries and book therapy being used in the provision of care for the mentally ill, describing the pioneering bibliotherapeutic work of librarians, especially in the United States. When asylums and hospitals for the mentally ill expanded in the mid-19th and 20th centuries, most contained libraries, which were a regular part of the treatment and recovery process. Interest in patient libraries was at its height during the interwar periods with Bryan’s (1939) identification of the six objectives of bibliotherapy (as discussed by Brewster, 2008, p.115):

1. Show the reader they are not the first to have the problem.
2. Permit the reader to see that more than one solution to their problem is possible.
3. Help the reader to see the basic motivation of people involved in a particular situation.
4. Help the reader to see the values involved in experience in human terms.
5. Provide facts needed for the solution of the problem.
6. Encourage the reader to face their situation realistically.

Brewster (2009) defines 2 kinds of bibliotherapy in the context of mental health treatment: “Self-help bibliotherapy uses non-fiction materials recommended by therapists and medical practitioners to provide patients with informational and practical help as they deal with mental health problems while creative
bibliotherapy uses fiction and poetry in both individual and group settings to ‘promote better mental health’” (p.400).

While numerous librarian-authored papers were written during the interwar period, none were empirical studies providing evidence for the formal inclusion of BT in treatment or the systematic development of training programs in BT. Instead, they were descriptive and anecdotal in nature. Thus, as education in medicine became more formalized and evidence-based, those therapies not grounded in empirical evidence were ignored. In his 1945 review, Schneck noted that even though BT had generally been accepted as being beneficial to psychiatric patients, clinicians, namely psychiatrists, neither studied nor published research on BT. It is not clear whether this was due to the difficulty in developing empirical studies to research BT or because for the most part, BT was initiated by librarians, rather than medical specialists. Regardless, the lack of empirical evidence persisted.

Post-war expansion of formal medical education and the lack of empirical studies on the efficacy of BT continued to hamper its recognition or development as a formalized therapeutic service. Despite a renewed interest in the application of BT to health provision as well as education during the period spanning the late 1960s through the 1980s (see, for example, Riordan & Wilson, 1989; Rubin, 1978), empirical evidence supporting the attributes of BT was still lacking. There were calls for BT to be legitimized by a more scientific approach to its study (Wenger, 1980) which might, in turn, lead to the development of formalized training (Armstrong, 1983). However, such aspirations have yet to be realized despite a general, though anecdotal, recognition of BT as an effective adjunct to more generally accepted therapies in the treatment of some kinds of disorders (Chiovarelli, 2010; Riordan, 1991; Starker, 1986).

Fanner and Urqhart (2008) observe that “[t]he role of the library in the care of the mentally ill continues to be well-recognized, and librarians often take part in programmes of rehabilitation and bibliotherapy. Finance continues to be the key barrier to investment; there are no requirements for hospitals to have libraries, therefore services may be targeted when costs need to be reduced” (p.246). Certainly, it is not unreasonable to presume that a conspicuous lack of empirical evidence supporting the impact of BT on treatment is a contributing factor.

The current focus on evidence-based medicine and evidence-based approaches to research has afforded an opportunity for BT to be researched in a more systematic manner. A number of systematic reviews and meta-analyses examining the efficacy of BT as an adjunct treatment to traditional mental health therapies have been undertaken. Most notable are those by Marrs (1995), Fanner and Urqhuart (2008 & 2009), and Chamberlain, Heaps & Robert (2008).

Marrs’ meta-analysis of bibliotherapy studies (1995) is described by Fanner and Urqhuart as “the most comprehensive meta-analysis of BT studies to date”
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(p.239). The seventy study samples analyzed suggest that “BT may be moderately effective for the generally circumscribed problems and populations the empirical studies have addressed to date.” However, “[t]here is an almost complete lack of quantitative empirical evidence on whether affective bibliotherapy approaches (like poetry therapy) are effective” (p. 864). Marrs limited his examination to studies of adults with a resulting data set of subjects who averaged in their mid-30s, were well educated and primarily women (68%). No studies of children or adolescents were included in this meta-analysis. Pardeck (1984, 1990a, 1990b, 1991) conducted studies on the efficacy of using bibliotherapy with abused and emotionally disturbed children but since then there has been a dearth of bibliotherapeutic research with young people.

Furthermore, there is no extant research that examines the relationship between the likelihood for the provision of such treatment and the accessibility of information resources and library facilities. Coates (2008) examines librarians’ perceptions of the role of public libraries in the “information on prescription” (IOP) and “books on prescription” (BOP) programs in the United Kingdom (UK), but research into perceptions of the library’s role by health care providers is as yet undeveloped.

In their systematic review, Chamberlain, Heaps & Robert (2008) describe schemes of BOP programs in the United Kingdom and the cooperative programs between health care providers and public libraries. They surveyed different cities and programs to determine method and scope of delivery and found that “[t]here is a wealth of evidence that supports bibliotherapy for a variety of treatments in many clinical settings. Bibliotherapy is a cost-effective treatment that encourages patient participation and encourages partnership working for the statutory bodies” (p.34). Unfortunately, this review did not extend to institutional settings and focused solely on outpatient treatment of adults. Also, since no such formalized system of delivering bibliotherapy to mental health patients exists in the United States, the efficacy of such treatment outside of the UK is as yet, unknown.

Fanner and Urquhart reviewed the UK’s BOP program (2008) and surveyed participating psychiatric libraries (2009). They reviewed meta-analyses and systematic reviews of the use and efficacy of BT in treating various mental health disorders, i.e., depression, panic disorder, self-harm, etc., and included an examination of evidence-based studies of the means of delivering BT interventions as well as the education and information needs of mental health service users. Their examination of the studies of patients’ educational and information needs revealed “a consistent requirement for educational and leisure facilities…” (p.242), as well as the need for information on illness, medications, and the mental healthcare system.

A number of studies examined patients in different environments including institutional settings. For instance, identified needs for in-patients included
accurate information, preservation of dignity, access to creative therapies, and help to reintegrate into society as key requirements among others (Campling, Davies & Farquharson, 2004). “… [U]sing bibliotherapy and associated interventions in the treatment of mental illness is supported by the evidence. Effectiveness is significantly increased when bibliotherapy is used in conjunction with psychotherapies, suggesting that treatment of in-patients could be beneficial, although further studies are required.” (Fanner and Urquhart, 2009, p.243).

Forrest (1998) notes that bibliotherapy for children and adolescents “appears” to help children to develop and cope with problems. Furthermore, Schlenther (1993) observes that librarians have traditionally produced “guidance for such services” (see discussion in Fanner and Urquhart, 2008, p.247) While BOP and IOP schemes presently being used in the UK with adults are producing noticeable results, “[t]he current role of libraries sited within mental health services in assisting service users with therapy seems less clear” (p. 247).

3. Methodology

This project will use a mixed methods approach. In Phases I and III, data collection and analysis will be primarily quantitative with some qualitative methods used in follow-up semi-structured interviews. Data collection and analysis in Phase II will be primarily qualitative.

Phase I

In this phase, attitudes towards, and use of the on-site library by patients, mental health care staff, and teachers will be measured both before and after a professional librarian/media specialist is placed in the library. The data collection instruments to be used in this phase will be a pre- and post-questionnaire that will elicit data on attitudes toward and actual use of the on-site library as well as the participants’ knowledge and use of bibliotherapy as an adjunct treatment option or teaching method. The questionnaires will be based on Townsend’s Attitudes Toward Bibliotherapy Scale (2009). Each of the participants will be encouraged to volunteer to participate in follow-up semi-structured interviews, which will provide more detailed responses than can be elicited from a questionnaire. The interview questions will be informed by the analysis of the questionnaire responses.

Phase II

In this phase, the participants will be patients, paid and volunteer staff, and teachers. The data collection instruments will consist of participant observation where a professional Library Media Specialist will be employed in the on-site library to provide traditional library services as well as structured, collaborative (with facility staff) and ad hoc programming. The data on the use of the library’s resources and services by patients and staff will be collected by the
Library Media Specialist and two research assistants and recorded in journals and field notes.

**Phase III**
Participants will consist of paid and volunteer staff, and teachers. The data collection instruments will be a questionnaire that will elicit data on attitudes toward and actual use of the on-site library in addition to data on the participants’ knowledge and use of bibliotherapy as an adjunct treatment option. As with Phase I, participants will be encouraged to voluntarily participate in follow-up interviews. Interview questions will be based on the post-questionnaire analysis and will also explore areas of interest.

**Data Analysis**
The data will be analyzed to compile evidence to support or refute the need for additional and/or expanded research on the role of a professionally staffed on-site library in both the treatment and education of youth in an institutionalized behavioural health setting. In Phases I and II, data collected by use of the questionnaire will be compiled and analyzed using accepted statistical methods for the social and behavioural sciences, specifically SPSS. Data collected through the semi-structured interviews will be coded with use of the NVivo software package and analyzed using the Constant Comparison Method (Glaser & Strauss, 1967). Data collected in Phase II through participant observation (recorded in journals and field notes) will be coded with use of the NVivo software package and analyzed using the Constant Comparison Method (Glaser & Strauss, 1967).

**4. Significance of the Study**
This study will not only provide evidence of the impact of a professionally-staffed library to the patients and staff of an institution for emotionally disturbed children, it will also provide evidence to support additional research into the efficacy of bibliotherapy as an adjunct treatment in psychological and psychiatric care. This will add to the research findings from studies conducted in the United Kingdom that suggest that a formalized system of “information prescriptions” (IP) and “books on prescription” (BOP) benefits patients in terms of reducing recovery time and improving treatment at a cost savings (Chamberlain, Heaps & Robert, 2008). To date, however, the populations subject to such studies are limited to adults with mild to moderate disorders treated in outpatient settings. Since little research has been conducted with children, the present study would begin to bridge this gap. Furthermore, this research moves beyond formalized provision of self-help bibliotherapy to determine if a young patient’s access (both directly and through their health care providers and teachers) to a professionally staffed on-site library may play a role in his or her treatment.
References


Implementing Innovation Management in the librarians’ education

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Abstract: In this paper we reflect on implementing innovation in Library and Information Science education in Borås, Sweden. In our role as lecturers we meet students and through them shape the presence and the future of libraries. Also we aim to match the needs of society in times of change. The main method for higher education is the courses we create and the educational methods we choose. Often the importance of this is forgotten. This paper presents a course called “Project management, development and evaluation”. In this course we try to give students some new tools for managing creativity and innovation in their future librarianship.

Keywords: innovation, youth, Drivhuset, creativity, leadership, library and information science education, libraries

1. Introduction

The starting point for our reflexions on the needs of innovation is the statement made by Octavia-Luciana Porumbeanu in her article Implementing Knowledge Management in Romanian Academic Libraries: Identifying the Elements that Characterize their Organisational Culture, where she stresses the importance of knowledge management in countries with rapidly developing economy (Porumbeanu, 2010, p. 549). Even Sweden is struggling for survival and success, even though from others’ point of view it is a well doing country. One of the most important assets in creating success and continuing welfare are - and have been in the history of Sweden and Europe, new ideas and people who are creative and innovative. On a European level this shows up for instance in the Lisbon strategy, aiming at a more competitive and dynamic knowledge-based economy in Europe and in the Bologna process in higher education. Linked to the Bologna process are often discussions on entrepreneurship, transferable skills and lifelong learning.

The University of Borås has adopted the device “Science for the professions” thereby professing to be “a university for the professions” in the sense of
emphasizing closeness between academic and practical work. The University of Borås strives towards interaction and cooperation with the business sphere, societal actors and institutions in the community. The professions' competence needs, their development and problems should play a large part in planning courses and programmes preparing students for their working life. It means that the culture at the university is oriented towards these ambitions as a whole. Octavia-Luciana Porumbeanu Madge (Porumbeanu Madge, 2012) has also summarizing conclusions that stress the importance of these aspects when she states that

Generating new knowledge is dependent on the organizational culture and in order to improve knowledge sharing and generation an interactive context must be developed and maintained. Because only when organizational culture allows and encourages change, expression of ideas, participation, communication, and dialogue, then learning and knowledge sharing are possible. (Porumbeanu Madge, 2012 p.248)

Some implications of this thinking are discussed in this paper; entrepreneurship/entrepreneurship should be encouraged and students can be guided and tutored by both their academic teachers and by representatives of the profession. The Swedish school of Library and Information Science as a part of the University of Borås has a large responsibility in educating librarians in Sweden, being the largest and oldest library school in Sweden. The library school wants to work close to the library profession through field studies, study visits, guest lecturers and a mentors’ programme.

2. Libraries and librarians as innovative resources

Often the image of librarians and libraries, in society and in the eyes of the public engages students in debates and writings. This is not without reason. Even though libraries in the past decades and still have gone through enormous changes the image of librarians has not gone through any remarkable change. Unfairly, one could claim. Librarians are usually not associated with creativity or innovation, even though that could be the case. Marketer Eileen De Sáez (De Sáez, 2002, p. 188) describes the problem of image in terms of identity crisis. Libraries would gain a lot by being more associated with the creativity and innovation they actually can inspire in users. In fact, libraries are for many people stimulating places where you can find all different combinations of knowledge. Browsing around the public library for example you can find your self one moment in the world of fairy tales and figures in the children’s department, then you move further and browse books of arts and so one. This is actually the essence of creativity: to combine different things in a new way and find new ideas and solutions. Too often the image of libraries is overwhelmed by routines and rules, necessary for protecting fair use of common goods. This discussion is also put by in another way by librarian John Bednarz Jr. (Bednarz, 2008) when he claims that routines in libraries are created to reduce the ever present complexity of interaction by fixing expectations. In fact, according to him:
Innovation is not found in technology, but in the way in which, for example, librarian and patron interact. (Bednarz, 2008, p. 81)

He also argues that routines and innovation do not exclude each another in libraries, as successful introduction of innovative change depend on functioning routine.

The director of Strategic Learning Centre, Metropolitan Library, Kathryn J Deiss, (Deiss, 2004) points out that there is a connection between creativity and innovation but they are not necessarily the same thing. According to her creativity is the act of generating new ideas and new perspectives. Innovation, on the other hand, occurs when creativity is applied and a product or service results.

Creativity (including creative thinking skills), then, is certainly critical to the practice of innovation. (Deiss, 2004, p. 18)

The students are a resource for innovation and new thinking in library work. They are young persons with a modern lifestyle. They can still be shaped and influenced in different ways. Education is one. The period of undergraduate education is a unique change to influence the coming professionals and show that “the sky is the limit” as a well known Swedish library director once put it.

3. Didactic reflection

Our educational question was how to better integrate the dimension of innovation and creativity in shaping a course for undergraduate students in library and information science? How can we stimulate the students to be brave and believe in their capacity to find new ways and solutions. Can we perhaps even encourage them to create enterprises or to apply for funding and develop their own projects which will gain the library community and users’ needs? Often the students are impregnated with expectations of being an employee serving society. That expectation is not wrong, of course not, but society can be served in many ways.

According to our experience several of our students have difficulties seeing themselves as managers or future leaders. It is perhaps one of the main characteristics of students who are oriented towards culture, literature and the arts. In fact, it can be seen as something promising: a new type of leaders not after power and high salaries only, but with a genuine willingness to contribute to a good society? Libraries need persons of all kinds and persons with drive and capacity for innovation and new ideas are in demand. We often notice that the students need encouragement and to be presented examples and role models to let go of the old images of the profession.

Our students have chosen the programme of librarianship. Deiss discusses the connection between strategy and innovation in libraries (Deiss, 2004). She mentions that it is important to have in mind that libraries are mature organisations; libraries have been successful in organizing information largely; the profession is expert based and service oriented (Deiss, p.24-26). This is a reason why the culture is more “performance oriented” than being amenable to “practising” in real time with real customers as Deiss puts it (Deiss, 2004, p. 25). Deiss claims that libraries, as mature, expert based organizations are not risk
taking organizations. She argues in a convincing way and supports our thinking about the importance to start with the students – to give them some knowledge gained in practising idea generation and trying to present to somebody outside their own comfort zone.

As course coordinators we saw an opportunity to meet needs. Our guide lines in shaping this course were the following points:

- Students are important, they shall become moveable, employable, competitive
- Creativity is needed in order to produce innovations
- Creativity must be stimulated and challenged
- Innovation can be found in practising and experiencing

4. A trial with Project leading, development and evaluation

The possibility to develop our thinking appeared in coordinating the course called “Project leading, development and evaluation”. The aim of this course is that the student should be able to:

- explain basic concepts of project work and evaluation
- motivate projects as working form in order to develop the activities performed
- clarify the role and meaning of leadership
- present a project plan and thereby demonstrate awareness of the different aspect of project working

The educational methods earlier used in this course are the traditionally academic: seminars, lecturing and written assignments. But are these good ways to promote innovation and ideas among young students? Aren’t the repetitive teaching methods like a lullaby for students, giving them a false feeling of security. The body does not gain the knowledge of the real life?

A new interpretation of the course syllabus generated all the above questions. Our conclusion was that we shall try to change the conditions around the students. We wanted them to go “out of the box” and feel the tasks more “under their skin” as the aspect of intelligence called emotional intelligence. They should take charge of their own product and “feel” the process.

5. A new partnership

During the course revision work we came into contact with project leader Lotta Lehikoinen at Drivhuset, Borås. Drivhuset is a non-profit foundation first set up, by students for students, in 1992. Drivhuset (Swedish for hothouse) works to bring about a change in attitude and culture amongst students regarding entrepreneurship. Drivhuset wants to inspire creative thinking and get students to believe in their own project/business ideas through lectures, workshops and campaigns. They want to encourage young people to be bold enough to “do their thing”, whether that be as self-employed, entrepreneur or as an employee within a company – entrepreneur.¹

¹Drivhuset, see further http://www.drivhuset.se/
This was a scenario we wanted our students to take part of during this course. The aspect of being an entrepreneur in their own organization is for many of them a new way of looking at the initiatives that they, as employees, can take. We want to describe an entrepreneur as a person who sees a need for improvement, acts there on to find a solution, often in form of a project, then creates a frame for needed resources and time and desired effects.

Can entrepreneurship then be taught? Reading a paper by colleagues at University West, Sweden, (Berndtsson&Sorbring, 2010) put us on the track of Jonathan Levie, researcher at Hunter Centre for Entrepreneurship in Glasgow. In 2006 he visited Stockholm and gave a lecture to representatives of Swedish business (Levie, 2006). Levie claims that entrepreneurship cannot be taught but it can be learnt. It is learnt mostly through experiential learning and different educational environments can support that in varying degrees. He found the settings where the teachers also had own experience in entrepreneurial work the most helpful for students. Similar thoughts had earlier led to the development of a course in political science where teachers of the department, librarians of the university library and different societal bodies and EU networks were engaged in the teaching of a course in EU knowledge at the Library of Economics at Gothenburg University (Spehar&Omstedt, 2011). That course became very much appreciated by students and was awarded the Gothenburg University pedagogical prize in 2010, showing that also non-traditional courses can be successful.

In the present LIS course we wanted the students to, although still hypothetically, get the feeling of going through the whole chain of questions, decisions and choices involved in working on a project aiming for change of some kind. We also asked of them to work out a project plan idea from scratch to presenting as if doing it for a financier. We want to encourage students to make persuasive and well prepared presentations as we agree with Berndtsson&Sorbring:

entrepreneurial acts often take place in an environment where immediate acceptance and understanding cannot be taken for granted (Berndtsson&Sorbring, 2010, p.10, our translation).

6. Course design

Teaching methods in this course varied a bit. Traditional lectures presented central ideas around project work and evaluation. In a lecture/workshop students were presented different project ideas and asked to work in groups to find out what information they needed to start working out a project. Early in the course the class was invited to Drivhuset for a creativity seminar where they were encouraged in different ways to explore their own interests and potentials, creating their personal “possibilities map”. Three guest lecturers with experience in the library/information field were invited to share their experienced learning from project management and work. Student groups could also book an occasion with Drivhuset’s project leaders for feedback on their library project ideas.
In the choice of course literature we wanted to show both the aspects of established, conventional, often repeated know-how and the research based critical interpretation of the role of projects in organizations. The students were also expected to search widely for relevant literature. The main assignment in this course was to develop and present a plan for a project of their own. Working in groups of four or five students they were asked to find a library/information problem they wanted to solve, develop a plan for how to do this in a project and to present this at a conference we arranged together with Drivhuset. The presentation should be as for a potential financier, as mentioned above.

7. Innovative products of the course
The creativity of the students led to innovative products within the frame of the course. The presented projects were of many kinds, such as: A library in the park, A SUMMON-day for university librarians, A student conference in LIS, Improving communication between librarians and teachers, Creating silent zones, among many other ideas.

8. Some concluding remarks
Libraries can and should be looked upon as creative and innovative forces in society. This can be highlighted in many ways. To draw attention to the dimension of innovation is a task for LIS education too. During the process of re-shaping a course in project management we as lecturers also had to move outside our comfort zone. As a result we became more and more curious. We wonder how other schools in library and information science introduce and practice creativity and innovation. What kinds of tools are given to the students to find an idea, shape it, believe in it and to understand how to frame it in order to make reality of it. It is a question worth strategy discussions for sharing experiences and finding methods together.

References


Drivhuset, see [http://www.drivhuset.se](http://www.drivhuset.se)


Swedish School of Library and Information Science, see [http://www.hb.se](http://www.hb.se) > Swedish School of library and information science.
Digital Resources for Academic Education: 
Experiences from the Scientific Project ‘Data Base 
Bulgarian Revival Towns’

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Abstract: State University of Library Studies and Information Technologies (SULSIT, 
Sofia) is a logical centre for realization of contemporary research, applied and 
educational projects, connected to the using of information technologies in the Humanity 
Studies. The research of period of the Bulgarian Revival focuses the interest of 
specialists from different scientific fields from Bulgaria and abroad. The project “Data 
Base “Bulgarian Revival Towns” (CD) aims to create new, solid information resource for 
the 50 towns which will serve the needs of scientific researches and the academic 
education. The present report summarizes the scientific activities in the mentioned 
project and their implementation in learning process with students of Library 
Management and Information Funds of Cultural and Historical Heritage specialties.

Keywords: Digital Resources, Bulgarian towns in the Revival, academic education, Data 
Base

1. Introduction

State University of Library Studies and Information Technologies (SULSIT, 
Sofia) is a logical centre for realization of contemporary research, applied and 
educational projects, connected to the using of information technologies in the Humanity 
Studies. The research of period of the Bulgarian Revival focuses the interest of specialists from different scientific fields from Bulgaria and abroad. The project ‘Data Base “Bulgarian Revival Towns” (CD)’, financed by 
Bulgarian Ministry of Education, Youth and Science (Annex 1/D002/144/13.10.2011) aims to create new, solid information resource for the 50 towns which will serve the needs of scientific researches and the academic education. The present report summarizes the scientific and applied activities in the mentioned project (period of realization: 2008-2013) and their implementation in the contemporary university environment.
2. Status of the scientific researches in Bulgaria in the subject area

The period of Bulgarian Revival is an object of appreciable and numerous researches. The development of Bulgarian town in the Revival is a theme, which cover several directions in Bulgarian scientific literature. Eminent Bulgarian scientists have devoted many works on this period. Their works cover themes as: condition and development of Bulgarian revival town and its economic and ethno-demographical characteristics; Bulgarian church society and municipality; education, science, cultural institutions and spiritual life; appearance of the first structures of civil society etc. The Bulgarian town in the Revival is investigated in the works of a numerous of Bulgarian historians as Hr. Gandev, N. Genchev, M, Semov, N. Todorov etc. Fundamental studies are devoted to the famous Bulgarian intelligent people, which best environment was found in the Bulgarian town during the Revival – monographs of N. Genchev, M. Kujumdjieva, R. Radkova, R. Gavrilova, K. Topalov etc. Profound historical and sociological investigations of Bulgarian revival intelligence are: encyclopedia “Bulgarian Revival Intelligence” (1988), compilers N. Genchev and Kr. Daskalova, studies by N. Genchev “Bulgarian Revival Intelligence” (1991), studies by R. Radkova “Bulgarian intelligence in the Revival XVIII – first half of XIX: survey” (1986), by D. Ivanova “Bulgarian periodicals and constructive literary and language processes in the Revival” (on material from journal “Chitaliste” – 1870-1875)”, worked up Application 4: “Representatives of Bulgarian Intelligence in Tzarigrad (40th – 70th years of XIX centuries)” etc. Particular questions of Bulgarian Revival culture, education and science are comprehensive done in the surveys by: N. Aretov, M. Arnaudov, V. Boneva, G. Borshukov, Hr. Gandev, G. Ganchev, N. Genchev, A. Gergova, Kr. Daskalova, A. Dimitrov, N. Dragova, Iv. Ilchev, Z. Konstantinova, St. Kutinchev, D. Lekov, Z. Markova, Pl. Mitev, M. Mladenova, N. Nachov, P. Parijkov, R. Rusinov, T. Todorova, Iv. Yankova and many others.

The interest of researchers in this scientific field continues to be very active and profound. Nowadays, actual is the question for the application of information technologies in studies in the area of Humanity, for creation of data bases with scientific information and with fulltext digitalized documents.

3. Actuality of the scientific problems

The studying of historical past and protection of cultural heritage are connected and important tasks of the scientific groups, universities and cultural institutions. In world dimension it is increases the meaning of using the information technologies in Humanity Studies. This is actual problem, which is underline in the base of programs eContent, 7 Framework Programme of European Union – direction “Social Science and Humanity” (Digital Library), of the beginning in 2007 European project - European Digital Library, Europeana etc.
The research of the period of Bulgarian Revival focuses the interest of specialists from different scientific fields from Bulgaria and abroad. That’s why the access to scientific information and prime source material in electronic format is so important for the contemporary development of scientific research and for the intercultural scientific exchange and communication.

To the moment there isn’t created a data base or digital library which contains digital documents or scientific researches, connected to Bulgarian Renaissance and in particular to the problems of the development of Bulgarian towns during this historical period. In first stage there are some projects of libraries for digitalization collections with revival periodicals and literature (Central Library at Bulgarian Academy of Science (“Bulgarian Revival Literature. Exchange of digital copies” – collaborative project with Library of Congress, USA); National Library “St. St. Cyril and Methodius” – Project, Digitalizing and preserving the written legacy of Bulgaria”; Public Library “Stoyan Chilingirov”, Shoumen (Electronic catalog “Revival periodicals”).

**Defining of problem:** To the moment there isn’t created digital information resource, which can give analytic and systematic information for the status and development of the Bulgarian towns in the Revival and which can ensure the needs of education and science in the Bulgarian universities and scientific institutions as well as in the research centers abroad.

The necessity of creation such digital resource is irrefutable: on the one hand for the insurance of the research process (needs of scientific sections in the universities, institutes, academies etc.), from the other hand – for the goals of academic education in Humanity.

The actuality of the problem is illustrated from the importance such developments of digital products to be implement in the educational content and in the educational activities of the following specialties in SULSIT: “Information Funds of the Cultural and Historical Heritage”; “Library Management”, “Librarianship and Bibliography” etc. They can be used also by studying the discipline “Historical information” by the programme of department “Archival Sciences” of Historical Faculty at Sofia University as well as in the programmes of subjects at St. Cyril and St. Methodius University of Veliko Tarnovo, University of Shumen “Konstantin Preslavski” etc.

**4. Methods and research approaches.**

The scientific tasks in the project will be execute through application of interdisciplinary research instrumentarium, which includes historical, sociological and politics methods for compare findings about the development
of 25 Bulgarian Revival towns of the area of today’s Bulgarian state. This approach allows complete and complex survey of the new social and economics changes and factors, which create conditions for the building in XVIII-XIX age of the Bulgarian town from new type and clarifying and generalization of the specification of Bulgarian Revival town as new for the pre-revival society, material, social, cultural and spiritual environment.

1. Interdisciplinary research instrumentarium, which includes historical, sociological and politics methods (Investigation Card). Research searches, findings and analyses.
5. Web design, creation of graphical and text version of materials and digital collection. Internet publishing, frame of rubrics and sections in the web-site of SULSIT. Multimedia presentations.
6. PR and educational strategy for popularizing the results from the project.

The Investigation Card includes the following chapters:
Chapter 1: Natural resources;
Chapter 2: Population;
Chapter 3: Agricultural development;
Chapter 4: Trades (Professions);
Chapter 5: Trade;
Chapter 6: Organizations of the professions in guilds;
Chapter 7: Social life;
Chapter 8: Administrative government;
Chapter 9: Life in town as living standart;
Chapter 10: Social and politics life after the liberation to the creation of independent Bulgarian government;
Chapter 11: Social and politics life after 1878 to the beginning of XX age

The empirical base of the scientific research includes data for new 25 Bulgarian towns (Aitos, Gorna Oriahovica, Jeravna, Karnobat, Kotel, Ljaskovec, Malko Tarnovo, Nesebar, Dupnica, Elena, Tryavna, Yambol, Kazanlak, Asenovgrad, Varna, Vidin, Samokov, Sevlievo, Trun, Haskovo, Bansko, Dryanovo, Teteven, Troyan, Chirpan), as well as research of the basic factors, contributed to the success of the Bulgarian Revival process.

Direct users of the project results: State University of Library Studies and Information Technologies, the universities in the country and abroad, including by education of blind people; scientific community; researchers; the broad public.
The innovative applied decision, which the present project offers, is presentation of this rich systematic information massive in Data Base “Bulgarian Revival Towns” (CD), which in the end of project contains information for 50 bulgarian towns. The data base will allow to reach to systematic search and results in utility of scientific observations. There is collected rich material, which can serve another scientific developments in different scientific areas – history, cultural studies, philology, ethnology, sociology etc. and especially for the history of science.

One of the most important tasks is the creation of Digital Collection “Bulgarian Revival” in the web-site of the State University of Library Studies and Information Technologies (SULSIT). The collection has graphic and text version. It supports directly the education of students with disabilities in the area of humanity studies (especially blind students, who can use the information in text version through specialized software Screen Reader and synthezator of Bulgarian speech - Speech Lab 2.0).


The Project foresees also development of educational content and training materials and application the data base in educational programmes and in training practices of students from SULSIT. Assoc. Prof. PhD Tania Todorova
develops new discipline ‘Digital Resources for Social Science and Humanity’ in which exercises the students are involved in digitalization process for Digital Collection “Bulgarian Revival”. Todorova (2010)

The publication activity in the project is connected with publishing of Volume 2 of the survey “Bulgarian towns in the Revival” and with reports in scientific conferences and in final seminar. Yankova (2006, 2010)

5. Results and achievements

1. There will be created an innovative applied product in the area of Bulgarian Humanity Studies – Data Base “Bulgarian Revival Towns” (CD), which cover analytical presented information massive for the development of 50 Bulgarian towns in the Revival of the territory of today’s Bulgarian state.
2. There will be collected rich material, which can serve different scientific works in different scientific areas and the interlibrary scientific exchange.
3. There will be created new educational content (with application in programs in SULSIT) with possibilities for interactive education and using new forms for teaching and learning. The students from the specialties Library Management, Librarianship and Bibliography, Information Funds of the Cultural and Historical Heritage, Information Technologies in SULSIT are lead in the methodology and instrumentarium of work with electronic documents and data by the using of contemporary instruments for publishing and communication.
4. The creation of Data Base “Bulgarian Revival Towns” (CD) and of Digital Collection “Bulgarian Revival” in the web-site of SULSIT will ensure suitable access to information for wide range public.
5. The Data Base “Bulgarian Revival Towns” (CD) and the Digital Collection “Bulgarian Revival” in the web-site of SULSIT will popularize in electronic environment the achievements of leading bulgarian university scientists. Internet begins its existence exactly in the scientific environment and change in traditional way for communication in the electronic space between scientific workers, lecturer and students. The project is an endeavor for presentation of serious scientific achievements and for popularization of this type of communication in the humanity disciplines.
6. There are supported the education of students with disabilities. The collection “Bulgarian Revival” in the web-site of SULSIT will have a text version, accessible for blind students with the specialized softwares Screen Reader and Speech Lab 2.0.
7. There will be published new study – Volume 2 of the edition “Bulgarian towns in the Revival”.
8. There is stimulate the publication activity and scientific development, including of young scientists. There will be created possibility for participation of students in research tasks.
9. The achievements and results from the project are accessible, they are base for future development and coordination with another partners from the country and abroad (universities, libraries, institutes, other organizations).
6. Conclusions

The perspectives for application of the results from the project and for transfer of knowledge have many directions:
1. Possibility for using the achievements from the project (issue, data base etc.) as base and model for future surveys of the bulgarian towns in the Revival in all aspects of the scientific, cultural, social and politic process in this period in it.
2. In the future the Data Base “Bulgarian Revival Towns” (CD) can be present online and can grow up in scientific portal. It will be open for scientific communication. Through Internet it will be accessible for the scientific society in the country and abroad.
3. The future development is connected to the enrichment of the educational content of programmes in SULSIT.
4. The project creates a conditions for participation of students in surveys on the bulgarian towns and it stimulates the development of young scientists and the development of new survey themes.
5. The achievements and results from the project are open and accessible, they are also base for future development and coordination with other partners from the country and abroad (universities, libraries, institutes, other organizations).

The project ‘Data Base “Bulgarian Revival Towns (CD)” strives for giving an answer of the information needs, generated from the reforms in the Bulgarian higher education as well as of the interest of the scientific society, from all over the world, in digital presentation of the cultural and historical heritage and in exchange of scientific information in electronic format. The project is subordinate to the building of new forms for integration of the Bulgarian education according to the world and european standarts in the science and education. In this way it is created a conditions for popularizing the Bulgarian science and culture and for its entry in the European educational space. It is created a unique information resource, which is representative and important for the international exchange of scientific information and knowledge.

References

A Conceptual Research Framework for Rural Library in the Development of Information Society

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Abstract. The purpose of this paper is to propose a conceptual research framework for rural library in the development of information society. A range of relevant literature and existing models are explored and a conceptual model is proposed and discussed. The proposed framework intends to add to the understanding of the roles and factors that influence the rural libraries in the creation of information society from the perspectives of experts in library and information science. The paper considers a Delphi technique to examine the identified roles and factors for rural libraries in developing information society. It is suggested rural libraries play their own unique role in developing information society. It is also allows the understanding of the relationships with various influencing factors that enable rural library to develop information society. This paper can help rural library managers to understand how rural library develops information society in respect of every dimension. The proposed conceptual research framework is an original, complete model that will contribute towards the enrichment of the relevant literature. The paper begins to develop a framework for considering rural libraries in the context of information society development and aims to further one’s understanding of roles and factors of the rural library to create and sustain information societies from the Delphi expert panels. It is hoped that the paper will provide a framework for researchers to conduct discussions on creating information societies.

Keywords: Rural Library, Information Society, Rural Community, Information Communication Technology, Information Society Development

Introduction

The important role of libraries in the information society has been recognized in a series of global discourses – for instance, the Declaration and Action Plan of the World Summit Information Society. In respond to the findings of the first UN conference, the International Federation of Library Associations and Institutions issued a statement saying that the conference had offered “a unique opportunity for the library community to be recognized as the heart of the information society”(IFLA, 2006).
The IFLA – like the organizers of the UN conference – see that the library system – especially in poor communities in both poor urban and rural populations. The IFLA identified one of the primary functions of libraries in reducing the digital divide – and in empowering people in all societies, but especially in poorer societies – is their ability simply to provide a locus for people to come and to learn.

In this statement, library has been found to cause the poor societies to be part of the information society through access to information. This can be achieved if libraries can provide a computer, a stable source of electricity, internet access and technology skills to the poor societies in general, and rural populations, in particular.

The increasing interest around library in the development of information society has resulted in a significant body of research to show empirically, to examine the effects of library in developing information society. However, minimal attention was given to the concept or understanding of the rural library in the development of information society. Although this line of study plays a major role in which it shows the importance of rural libraries, limited research has been conducted that can provides real insights for rural libraries to play their roles in developing information society (Bawden, 2004: Littrell, 2006).

Given the lack of rural library studies in the development of information society, this paper draws on the extent literature to develop a preliminary theoretical framework for examining the rural libraries in the development of information society with particular emphasize on the roles of rural library in developing information society, factors which contribute rural library towards information society development and identifies possible roles for the rural library in developing information society, particularly in Malaysia context.

Review of the literature
This review is based on the extensive literature search of studies published around the world. The paper identified the key words “Rural Library”, “Information Society”, “Rural Community”, and “Information Communication Technology”. Based on the university databases and journals subscribed to, such as Emerald, SAGE, and ProQuest, the researcher found that most of the studies came from Africa, India and other developing countries. However, the search found that studies on rural library in Malaysia context are limited.

The rural library and the development of information society
A significant body of research has suggested rural library in the information society development. As argued, the rural libraries are expected to promote such unique roles that can help society to obtain competitive advantage and become a well-informed citizen (Wijetunge, 2000). The focus of this article is on developing the theoretical framework for the rural libraries and
information society development, it is important to have an understanding of the
term of rural library and information society at the first place. This study will
consider the definition suggested by UNESCO which define rural library as a
place to collect, store and disseminate information materials in accordance with
the needs of the community and for community use. Other terms that similar to
rural library are community library, village library and village reading room.

Meanwhile, the term information society has been used with varying
meanings in both popular scholars and literatures. For the purpose of this study,
the term information society is used to refer to the society which makes
extensive use of information and knowledge through the availability of
information infrastructures. Information and knowledge is viewed, as a source
of development, that enable individuals, communities and people to reach their
full potential in promoting sustainable development and improve their quality
of life. This definition suggests that information infrastructures include of ICTs,
Internet and libraries will support society to exploit the information and
knowledge.

The relationship between the information society and library can be traced
from the scientific revolution of the mid-seven-tenth century in Europe (Hoare,
1998). This relationship shows that in the earlier information society
development in Europe, library were more to disseminate and control of
published information through abstracting and bibliographical services while the
new “development” of information society initiatives became the use of
electronic technology applications, that engaged library users with the
information as well as programs such as literacy that helps to increase the
literacy rate (Hoare, 1998).

This literature shows that library have historically undertaken a broad
range of ideas to develop public libraries as informal knowledge centers from
the emerging of industrial society to information society and yet is knowledge
society. These ideas have affected the ways in which public libraries have been
developed their roles as well as ideal model of the library in present and
immediate future of information based society.

The significant of rural library and the development of information society
with emphasis on information literacy has been discussed in the recent
literatures (Lai, 2011). For instance, Wallis’s (2005) study showed that
information society development was related to information literacy skills that
are needed for citizens of information societies. He also suggested librarians
need to transfer these skills to people at all levels of society to strengthen
economic, social and personal. Since several studies have shown that library in
the information society development relates to the creation of information
literate citizen (Harding, 2008), rural library is thus expected to increase the
information literacy rate. The importance of information literacy has been
recognized as one of the role of many of public libraries. In 2008, Jane Harding
noted that there is little mention in the literature of the role of public libraries in
information literacy. In respond to the importance of library in Information
Society, the National Library of Malaysia has set various strategies and
approaches for reading promotion and literacy education. These strategies aim
to create literate environments and promoting literacy by offering relevant and attractive reading materials, enhancing reading materials, enhancing reading comprehension for all ages including children and young adults. Studies have shown that information literacy services offered by public libraries have a positive impact on information literacy rate (Bandyopadhyay, 2008; Jagnayak, 1997). They found that the availability of reading materials such as newspapers, books and magazines; audio-visual materials, information kiosks and internet access to websites have improved reading habits and increased the literacy rate.

In an effort to help public libraries plan better for the development of information-based society, the Copenhagen Declaration identifies four main roles of public libraries: a) democracy and citizenship, b) economic and social development, c) lifelong learning and d) cultural and linguistic diversity (PubliCA, 1999). Many studies had also added new dimensions to the debates over the role of public libraries and librarians in the emerging of information based society. In study designed to understand the critical role of public libraries in the 21st century, Smith (2008) list the main critical roles of library as follow: it is democracy; it is present the various ideas and views; and it is providing educational opportunities. The term “democracy” is used to ensure people have access to accurate and reliable information. According to Smith (2008) the role of library is “…to bridge the digital divide, demonstrates the power of information, and serves as the collector of human record and history.” The role of library to present various ideas can be described as a library exposing people to issues, culture, diversity, education and possibilities (Smith, 2008). As an educational center, Smith described the role of public library is to provide educational materials, training and learning that is public libraries help people to get better jobs and become more productive members of society.

The significance roles of public libraries in the emerging information societies have added new dimensions to the practical actions of the national, federal governments as well as rural libraries. In this regard, The Copenhagen Declaration had urged public libraries to review the roles and resources and redesigning services to respond to changes in social needs, to work towards long-term co-operation and partnership with other memory institutions and those involved in the community education and to ensure that people know and able to exploit fully all of the public library network resources by effective marketing services to all sectors of society (PubliCA, 1999). Now, library has created the new avenue towards information based society, however, these efforts will be successful with the support from the national or federal government. Therefore, IFLA had suggested that national, regional, local governments and international organisations to: a) invest in library and information services as vital elements in their Information Society strategies, policies and budgets; b) upgrade and expand the library networks to get the greatest possible benefits for the people and communities; c) support unrestricted access to information and freedom of expression; d) promote open access to information and address structural and other barriers to access; and e) recognise the importance of information literacy and vigorously support strategies to create a literate and skilled population that can advance and benefit
from the global Information Society (IFLA, 2003). Indeed, Mahmood and Shafique (2009) show that the significance of public libraries in the emerging of information societies, libraries should be integrated into the information society for inclusion and consequently, they have seen both an increase in the librarian’s responsibilities (e.g. visualize their roles and to cope with the changing environment) and the addition of new responsibilities related specifically to create 4A’s (Awareness, Access, Affordability and Application) of information based society.

Several attempts have been made to explain the significance of library in the development of information-based society (Hoare, 1998). On this basis, the article leads to the acceptance of idea that rural library plays a role in the development of information society. Therefore, the establishment of rural libraries are related to the development of information society is an important first step in this line of research that emphasizes the importance of the roles and factors that contribute to the development of information society.

Roles of rural library in developing information society

A significant body of research has suggested rural library in the information society development. As argued, the rural libraries are expected to promote such unique roles that can help society to obtain competitive advantage and become a well-informed citizen (Harding, 2008).

During the years, rural libraries that lead to the information society development were discussed in various names by different authors: “the role of the public library in the 21st century” (Smith, 2008), “the role and responsibilities of public libraries in the age of technology” (Emmanuel A. Enujioko, 2001), “the library as a tool for development” (Mamvoto and Mutasa, 2004; Jerome and Theresa 2009), new premises of public library strategies in the age of globalization” (Anttiroiko and Savolainen, 2007), “the role and priorities of public libraries and librarians in the third millennium (Aqili and Moghaddam, 2008; Pacios, 2007), towards a new mission for public libraries as a “network of community knowledge” (Chowdhury, Poulter and McMenemy, 2006) and finally, the public library, social exclusion and the information society (Dutch and Muddiman, 2001). What is worth noting of the rural library is that positive relation with information society development is reported in most of the cases (Ngulube, 2000), and therefore rural libraries should identify the most significant roles in their effort to develop information based society. Generally, IFLA (2005) was recognized the roles of public library towards information-based society with reference to the development of information literate citizen. In this study, the roles can be explained under four main categories:

a) Informational roles

The most significant role of libraries in developing well-informed citizens as stated by IFLA (2005) is to provide information to the public. The library’s role towards effective information provision can be done through collecting, organizing and exploiting information as well as providing a wide range of
information sources using an advance of information technology. Calanag (2003) noted that the informational role has been linked to self-improvement and well-informed citizenry. With respect to the informational role, Fisher et al, (2007) described informational as consisting of all the themes of searching and finding, reading, life-long learning, learning resources and learning environment. Moreover, Most (2009) found that library as an informational place was increased the number of people who came to library for reading and reading related activities. Since reading is one of the characteristics of information society, then it proves that the library is one of the institutions that are able to develop information literate citizens.

b) Information literacy educational roles
IFLA (2005) presented a list of roles to aid public libraries in the development of information society. Part of their role was emphasized on the importance of information literacy education. They put an effort on the information literacy education through the provision of materials to support formal and informal learning processes as well as literacy campaign. In her study, Ji Lai (2011) discovered that public libraries were aware of their educational roles in information literacy (IL) training providers and draws our attention to provide efficient IL instruction for the public. She identified four guidelines for effective IL trainings at public libraries. These are: a) advance ICT infrastructure, b) providing formal IL training courses, c) improving library staff’s IL training and teaching skills and d) building partnership with local organizations. Yang (1998) also identified six elements for library to promote information literacy. These elements are restructuring the learning experience that builds a lifelong habit of library use, understand information seeking behavior, understand the concept of information literacy, provide a customized service, understand new librarian’s skills and establish strategic alliance with constituents, the community, and policymakers in areas of appropriate concern.

c) Technology and network roles
A large and growing body of literature has investigated the significant role of technologies in library to educate people to emerge as an information society (Singh and Nazim (2008); Geldof (2005); Pyati (2007)). The concept of information society is often used to make information available and provide the necessary technology (Kumar and Singh, 2000), therefore, libraries have to perform pivotal roles to store all kinds and forms of material and information and disseminate beyond the geographical boundaries (Singh and Nazim, 2008). The advance of information technology is enabling libraries to accomplish this immense task. In relation to this, Dutch and Muddiman (2001) noted that public libraries could play an important part to address social exclusion, to offer a particular mix of skills, expertise and resources to society. However, they suggested that if libraries are to reach out to the information society, libraries need to move beyond passive conceptions of access and utilize ICT as a means towards a much more active engagement with local communities and disadvantages users.
d) Cultural roles
As noted in IFLA (2005), the development of well-informed citizen is affected by developing community’s cultural. Through cultural development, libraries should put effort into conducting cultural activity, organizing cultural programmes and ensuring that cultural interests are represented in the library’s materials. In relation to the cultural role, the Geneva Plan of Action (WSIS, 2003) emphasized the role of libraries to promote cultural heritage, support local content development and increase the capacity for indigenous communities to develop content in their own language. By doing so, libraries contribute to the development of personal creativity and pursue new interest through access to the variety of different media about the world's literature and knowledge, including community’s own literature, local cultures and basic life skills (IFLA, 2005).

Factors that enhance rural library to develop information society
The study of the rural library development (Dent, 2008), advanced the arguments of the significant of rural library in information society, by noting that it can be achieved if it is supported by various factors. Within this framework, the term “rural library factors” will be preferred, referring to all factors that have been identified as effective in developing information society.

The conceptual framework is used to analyze the factors that contribute to the development of information society in rural library context. In the following section, the study provides an overview of the four dimensions and follows this will detail support from the literature for the interacting features of each dimension. The model in figure 1 aligns the four dimensions on which rural library might create an information society:

- ICT infrastructure
- Information content
- Physical delivery infrastructure
- Human capacity

a) ICT infrastructure
Most of the literature and studies on the development of information societies emphasize the importance of information technology infrastructure as a key driver to fast facilitate the development of information society (Norsiah dan Halimah, 1998). For instance, Zainab, Abrizah and Edzan (2002) found that a reliable and robust ICT infrastructure and a community that is ICT literate among the elements that are likely to affect information rich society. In fact, many aspiring information society development, understand the importance of managing information technology, particularly, empowering individuals and communities in rural areas, because ICTs provide access to information, improve access to information resources, promote information awareness, improve governance and enhance inter-community networking, which in turn
increase their economic and social well being that is essential to the information society (Lim and Anis, 2003). In order community to obtain benefit in the ICT revolution, government should rectify the following issues: a) provide sound technologies and infrastructure to gain access information resources available in the public domain; b) committed to training skilled workers to build, maintain and provide value added products and services; c) introduce policies that promote equitable participation of the civil society in the knowledge society and d) make known to the public of success stories so that it can be replicated or followed.

In her discussion on the significance of technology for rural library, Heuertz (2009) reaffirm the positive contribution between the development of ICTs and its impact to the creation of new services to the community. In a time, where ICTs is the major factor of the creation of information-based society, Narula and Arora (2010) found that there was a gap between the demand side and supply side of information technology services. They further suggested that an effective means to eliminate the gap is to understand the users’ attitude towards these services also to encompass their trust and reliability, awareness level and training needs. Other factors such as stakeholder’s involvement and sustainability of the ICTs initiatives need to be investigated to design specific information packages for rural people with different needs. The lessons from public access computing experienced by Gomez (2009) is useful to understand the types of key success factors that are made in this context. Those five key factors can be listed as follow: a) understand and take care of local needs, b) build alliances with other venues, c) collaborate with other media and community services, d) strengthen sustainability and e) train infomediaries and users. As such, the ICT is considered necessary for rural library to develop effectively information society.

b) Information content

Information content may be considered importance in the creation of information society (Lor and Britz, 2008). In order to use information effectively, there have to be appropriate information infrastructure plans in place; that is, rural library is necessary to put in elements that promote the effective use of information – affordability, timeliness, and presentation of the languages in which users may relate to and understand (Lor and Britz, 2008). This, in turn, results in an information acceptance and utilization. Addressing the local information content will encourages people to use of library services, especially if they are empowered to participate in content development (Greyling and Zulu, 2009). In fact for rural library to move towards the provision of relevant information and further evolve into information society, a strategy is needed to develop the information content in rural library to enable fulfilling the rural citizen information needs. The Lor and Britz (2008) discussion on the three important issues of information content – freedom, equity and inclusion are useful to understand the strategies that are made in this context. Several studies have mentioned to the importance of rural library and
information society in a context of information content (Greyling and Zulu, 2009).

c) Physical delivery infrastructure

Physical infrastructure is a necessary condition for a future library to participate in the development of information society. A physical delivery infrastructure is referred to a physical space, physical document supply and information preservation (Lor and Britz, 2008). There is also evidence that library with a good physical infrastructure will facilitate the information society development (Fisher, 2007). For example, the development of successful information societies are related to the library initiatives towards the importance of physical delivery infrastructure such as physical building, computer and communication facilities and accommodation for reading and relaxing etc – a major contributory to the information accessibility and affordability (PLRP, 2008). This, in turn, results in a sophisticated outlook. The physical delivery infrastructure not only broadens the information accessibility but also increased level of literacy; reduced inequalities, disadvantages and social exclusion experienced by isolated communities; improved quality of life for rural communities, etc (PLRP, 2008). The role of physical infrastructure in creating information society has received much scholarly attention (Fisher, 2007)

d) Human capacity

Human capacity may be considered a precondition for progress towards an information society (Lor and Britz, 2008). As a result of this, library has to build up human capacity if they want to play their role in the information age. Human capacity refers to the development and the improvement in the human resources capabilities through the acquisition of general and technical knowledge, skill and effectiveness required for the realization of goals (Adetoro, Oyefuga and Osunkoya, 2010). In order to ensure the rural library participate in the development of effective information society, there have to be appropriate skilled people in place; the librarian is necessary to put in place the elements that promote effective use of information as well as rural library resources – strengthening their roles as information intermediaries and developed their knowledge and skills that enable them to educate and train information users to identify, locate and accessing resources, evaluating and utilizing these (Bross, 2010). In fact, for rural librarians in particular, to move towards the development of information society, a greater knowledge, skills and experience of the history, culture and language of the community is needed to satisfy the needs of rural communities, effectively manage marginalized community knowledge, and empower and improve the information literacy of community members (Chester and Neelameghan, 2006). It is hence accepted that there is a need to develop professionals equipped with the knowledge and skills as they are central to the effective functioning of the information society and their work is recognized as a critical role (John Feather, 2006; Adetoro, Oyefuga and Osunkoya, 2010).
A Conceptual Research Framework

Given the rural libraries today’s environment, the conceptual framework shown in Figure 1, views rural library in developing information society primarily as an outcome of strategic rural library plans through the best roles and factors that support rural library. Rural library are expected to support the development of information society by promoting inimitable roles and factors.

The current framework is based on existing literatures:

a) Studies into the role of rural libraries in the 21st century have clearly shown that rural libraries play an important role in supporting the development of information society (Smith, 2008; Enujioke, 2001; Aqili and Moghaddam, 2008; Pacios, 2007; Goodman, 2008)

b) Studies that integrate rural libraries into information society development suggest that factors related to technology, information content; physical infrastructure and human capacity might influence rural library to create an information society (Lor and Britz, 2007)

The framework explores the factors, which contribute, to the development of information society and the possible roles for the rural library to support the development of information society.

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Dependent variables</th>
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<tr>
<td><strong>Roles</strong></td>
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<td>a) Informational role</td>
<td>Rural library in the development of information society</td>
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<td>b) Information literacy</td>
<td>Information literate citizen</td>
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<tr>
<td>c) Educational role</td>
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<td>d) Technology and network role</td>
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<td>e) Cultural role</td>
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<td><strong>Force Factors</strong></td>
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<tr>
<td>a) ICT infrastructures</td>
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<td>b) Information content</td>
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<td>c) Physical delivery infrastructures</td>
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<td>d) Human capacity</td>
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Figure 1: A proposed conceptual framework for rural library and information society development
Methodology

The framework for rural library and information society development comprising the roles and the force factors that contribute to the creation of information society is developed from a review of the literature. There is a need to understand the roles and factors empirically, since it is purely theoretical. The empirical research will seek to see how the identified factors and roles appear to support the rural library in the development of information society.

Therefore, the study will employ a Delphi technique as a method to validate the roles and factors that contribute to the creation of information societies. The Delphi technique is often the method of choice because it was developed to obtain a reliable consensus of opinion from a group of experts (Buckley, 1995). In addition, it has been used in long range planning whereby the intuitive judgment will be solicited for the purpose of delineating the possible future events or outcomes of present planning decisions (O’Neal, 1984).

A Delphi study will be used to codify the judgment of selected experts who will be asked to consider their views about the specific requirements for rural library to support the development of information society. About 14 people were selected to be a panel of experts in this study. Expert panel is made up of the chief librarians of the Malaysian state libraries that has experience in librarianship, library planning and development has been selected as the respondent. As such, the view of experts on issues related to this study is very valuable. Each participant will receive three rounds of a questionnaire.

In round one, open-ended questionnaire based upon the research questions and conceptual framework will be presented to the experts. Experts will be asked to offer their views of the factors and roles that have been discussed in the conceptual framework. The study also encourages them to add other dimensions that are related to the topics. Based on the expert’s view, the study will analyze and categorize the identified roles and factors according to the information from the library literature related to rural library and information society. This will be used to develop a questionnaire which includes a list of categories of roles and factors to develop information society.

The second phase will include the analysis of the information gathered in the first phase. In this phase, a list of categories will be presented, and each expert will be asked to state their level of agreement with the categories being included in the definition of roles and factors of the rural library to develop an information society.

In round three, the responses will be collected and analyzed and will be returned to the experts. Descriptive information about rating and the entire group response will be provided. The experts will be asked to review each item, to review the group response, and to re-rate the items. They will have the option to revise their earlier responses or to keep your initial ratings. Upon completion of the third round, the responses will be reviewed and summaries of the ratings provided in descriptive statistics. Figure 2 outlines he process of administering the study.
Summary and Conclusions

The paper has provided a detailed overview of literature in rural library towards the development of information society in general, and roles and factors, in particular. This brief literature review explores all the roles and the factors that appear to be strongly support the development of information society in rural library context. In addition, the paper has described the research methodology design that is appropriate to validate the framework dimensions. Towards this end, a conceptual research framework has been proposed which:

- consider the already existing theoretical knowledge;
- has the intention to contribute towards the better understanding of the strategic roles and factors through which rural library support the information society development.
- consider the Delphi technique as a research methodology design.

Part of the value provided by this framework is the reflection of the factors that have not received appropriate attention when thinking about rural library and information society development. While the value of the rural library role in
developing information society, as well as support from various factors, has been outlined in the past, there is still not a complete model or framework that describes and analyzes the specific roles and factors of rural library in developing information society.

The proposed framework is considered as the original and complete model wishing to contribute to the literature by exploring the relationship between the best rural library roles, forces factors, and information society development. Rural libraries continue to be a major role in terms of information society development, perhaps these small libraries, has the potential to play an important role in development of information literate citizen and provision of services for the “newly literate”. The strategic roles and the force factors are seen as valuable to support rural library, thus contributing to the development of information society. Those roles and factors mainly increase rural library commitment, motivate and generally affect the information society development. Therefore, the roles and forces factors act as a trigger for rural library to participate in the information society development.

As noted, the model presented here is purely theoretical and the next step is to examine the predictive potential roles and factors empirically, modify it accordingly and develop a more robust framework. The empirical study will seek to see how the identified factors and roles appear to support the rural library in the development of information society. It was suggested that the Delphi technique is used to validate the dimensions presented in the proposed framework. Finally, it is hoped that the paper will provide a framework for researchers to conduct discussions on creating information societies.

References


Shaifuddin, Mohd Saad

(Eds.), *Handbook of Research on Human Performance and Instructional Technology* (pp. 470-484). doi:10.4018/978-1-60566-782-9.ch028


An Approach to Decision Support System Usage for Data Storage Configuration Variant Selection

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Abstract. Electronic record management systems (including archives and libraries) should meet a large set of requirements, which can be described by tangible and intangible criteria. If digital data storage is needed for a library/archive, its configuration should be clearly defined at preliminary development stages. Tangible criteria can be represented quantitatively, by specific values of certain parameters. Intangible ones (reflecting, for instance, non-functional requirements) should be described by expert estimates, since there are usually no quantitative values to describe them. The paper suggests an approach to data storage configuration selection using multi-criteria decision making (MCDM) support methods, based on MoReq requirements and hierarchical storage management concept. MCDM support technology used allows selecting optimal data storage configuration, meeting both tangible and intangible requirements, in every specific case.

Keywords: data storage, configuration, decision-making, alternative, criterion, expert estimation.

1. Introduction

Electronic record management system (EDMS) development envisions 6 stages (pre-development stage, featuring pre-project research, analytical stage, when the requirements are formulated, project stage, when technical design is built, development stage (when the software is actually created), testing stage and implementation stage). At the pre-development research and analytical stages, when the terms of reference are formulated, it is extremely important to ensure their maximal compliance with the customer’s requirements.

The task of formulating the terms of reference is placed on the project workgroup, which should include analysts representing the customer and analysts representing the executor. Together they are to work out the terms of reference, ensuring long and sustainable functioning of the EDMS in future.

Typical requirements to electronic record management systems (ERMS) (a more general category) and electronic document management systems (EDMS) are specified in the Model Requirements (MoReq, 2001). Most requirements
described in this document are functional ones, which can be described by ether Boolean (for instance, “The ERMS system must provide facilities to manage input queues”) or quantitatively expressible (such as, for instance, maximal number of metadata attributes supported by the system) parameters. These parameters (factors or criteria) are often called “tangible” ones (Saaty, Jiao/Tseng etc).

In order to describe non-functional requirements (presented, mostly, in section 11 of MoReq standard) it is necessary to formulate intangible factors or criteria. Digital libraries and, particularly, archives (also representing types of EDMS) have long life spans, so these non-functional requirements have vital importance for EDMS of these types, sometimes they can be considered even more critical than functional ones. In order to evaluate the extent of future EDMS compliance with non-functional requirements experts should be involved in this EDMS development stage. The more adequately the terms of reference (considering both functional and non-functional requirements) are formulated, and the closer they are to the customer’s needs, the less time and money will be spent on re-constructing the future EDMS during succeeding development stages, and during its implementation.

2. Description of expert technology-based approach to EDMS terms of reference development process

It is suggested that the possible variants of future EDMS configuration (to choose from) are to be formulated and evaluated by analysts from both customer’s and executor’s sides – members of the project group. They will act as experts in this context (according to our terminology).

Again, usage of expert technology can facilitate prevention of future EDMS mismatches with the customer’s needs, since experts are most competent specialists in the given field and they are most likely to be capable of predicting these future possible mismatches and considering them while formulating the requirements.

As it has already been noted, requirements to the future EDMS include functional and non-functional ones. Examples of functional requirements include security-related requirements, access-related requirements, requirements to data retention and disposal, searching, retrieval, rendering etc.

According to MoReq “…non-functional requirements often are difficult to define and measure objectively, it is nevertheless valuable to identify them so that they can be considered, at least at a high level”. Examples of non-functional requirements are: ease of use, performance, system availability, ability of the system to adapt to media degradation, hardware and format obsolescence. Particular attention should be given to non-functional requirements reflecting hierarchical storage management concept (the more often the data are addressed, the higher the hierarchy level they are stored at – in each specific case these issues are to be defined by experts). Examples given here are general and each of them can and should be decomposed into a set of more specific ones.

Non-functional requirements represent a weakly-structured subject domain (i.e., it is problematic to define their interconnection and quantitatively describe
them). So, one of the most convenient way to describe it in the most thorough manner would be to use a hierarchical approach, i.e., formulate a hierarchy of requirements (Saaty, 2008), including both functional (tangible) and non-functional (intangible) requirements.

Part of the requirements can be taken straight from MoReq and included into the hierarchy once and for all, since, it is a standard for all kinds of EDMS and these requirements will constitute a universal part of the hierarchy.

It should also be noted that requirements set forth in MoReq are closely connected with each other (there are a lot of cross-references within the standard text) and, consequently, allow easy interpretation in the form of hierarchy graph. But, at the same time, MoReq allows adding new requirements for specific EDMS configurations. And it is to perform this task of adding new configuration-specific requirements to (or deleting them from) the hierarchy the experts should be addressed.

The project group would, naturally, include specialists from different sub-domains (subject domain experts, business-users, IT specialists, developers, analysts, testers, management representatives etc). So, each group of criteria (requirements), belonging to the sub-domains, is to be formulated by adequate specialists from the project group. Also, these very specialists are to evaluate the compliance of future EDMS configuration to the customer’s requirements, related to their respective sub-domains. After the hierarchy formulation is completed, all requirements (criteria) from the hierarchy are to be weighted by the experts. After that all possible EDMS configuration variants are to be evaluated according to all criteria, and aggregate estimates (which can be also called relative efficiencies, or ratings) of configuration variants as to their compliance with the customer’s needs are to be calculated.

3. Software description and a hypothetical example

The complex target-oriented expert evaluation technology, briefly described above, is implemented in “Solon” decision-making support software family, developed by the Laboratory of Decision-making systems (DSS) in the Institute for Information Recording of the National Academy of Sciences of Ukraine (http://www.dss-lab.org.ua/Main.html). It should be stressed that “Solon” DSS family is targeted at facilitating expert decision-making support in any weaklystructured domains. Multi-criteria expert choice of the most suitable EDMS configuration variant is just one of the suggested applications of the DSS. “Solon” DSS allows facilitating all the above-mentioned decision-making process stages with its user-friendly interface. Let us consider the DSS functioning on a hypothetical example where five alternative EDMS configuration variants are evaluated.

In this example the hierarchy of requirements was built by the paper authors (based on MoReq and general EDMS development concepts) but in reality it is assumed to be built by respective experts.

The EDMS whose alternative configurations are evaluated in this case is targeted at managing the hydro-meteorological information archive. The archive itself is meant to facilitate collection and storage of hydro-meteorological
information as well as informational support of research tasks. Volumes and types of data to be managed in the archive are:
- 50,000 digital magnetic tapes with data on environmental conditions for several decades’ period, 1500 Tb of satellite data on magnetic optic mediums, 1000 Tb of other informational materials.
- 200 millions of various paper documents in A0-A4 formats, 400 millions of photos, including documents on photo mediums, books and manuscripts.

The total archive volume is 6 Pb. Annual volume growth rate is approximately 10 Tb, including 1 Tb of ground-level hydro-meteorological measurements and 8 Tb of satellite data.

The key tasks of archive creation are: digitalization of paper mediums; data migration to modern storage devices; providing access to different data types; facilitation of web-technologies’ implementation and multi-level (hierarchical) data storage.

Based on these tasks the following configuration variants were formulated:

**Configuration 1**: 1 magnetic tape library IBM TS3500 (http://www-03.ibm.com/systems/storage/tape/ts3500/), and disc data storage system IBM DS8300, management server based on IBM system z9 BC managed by OS z / vm and zLinux, archive data management software IBM DB2 Content Manager OnDemand and IBM Tivoli Storage Manager (http://www-01.ibm.com/software/tivoli/products/storage-mgr/productline/compare.html).

**Configuration 2**: 40 archival optical storage devices ELAR NSAM 7000-BD (http://ncm.ru/nsm_bd.shtm), disc data storage system IBM DS8300, control server on the basis of IBM system z10 EC managed by OS z / vm and zLinux, document archiving and management software Saperion.

**Configuration 3**: Data storage system architecture EMC Centera, representing redundant array of independent nodes (RAIN) Storages and servers. Access and storage nodes, included into the architecture, represent servers of Intel platform with ATA discs. Servers are connected with each other through internal LAN, and they also have Ethernet for external connection. All nodes are working under control of Linux OS modification. Search within the EMC Centera is conducted by Centra Seek and Chargeback Reporter (http://www.emc.com/products/detail/hardware/centera.htm).


**Configuration 5**: 70 libraries based on UDO or magnetic optic mediums Plasmon G638 (http://www.dataarchivecorp.com/udo-plasmon_g-638.htm). Storage systems on magnetic discs COPAN 400M Native MAID (one cabinet) by SGI company. Control server based on IBM system z9 BC managed by OC z / vm i zLinux. Software of document archiving and management system Saperion.
A hypothetical hierarchy of criteria according to which alternative configuration variants are estimated is built as follows. The top (zero) level of the hierarchy includes only its main goal – “building an effective archival data storage system”. The first hierarchy level includes its immediate sub-goals (or sub-criteria) – “fulfilling the requirements to data storage system”, “low cost of system creation”, “approval by higher management”, “time required for data storage system creation”. These goals are further decomposed; fourth and fifth levels of the hierarchy are comprised by criteria, reflecting MoReq requirements (including non-functional ones). In general, the hierarchy includes about 90 criteria, interconnected with links. The hierarchy structure is shown on Figure 1.

Relative influence of each criterion upon its “ancestor” in the hierarchy graph is estimated by experts. When all the influences are estimated, relative efficiencies (ratings) of alternative configuration variants are calculated. Complete list of criteria (requirements) included into the hierarchy, and their respective numbers, can be found in Table 1.
Table 1. List of criteria (sub-goals, or requirements)

<table>
<thead>
<tr>
<th>#</th>
<th>Goal formulation</th>
<th>#</th>
<th>Goal formulation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Creation of a System for A priori Data Storage</td>
<td>66</td>
<td>Management of Non-electronic Records</td>
</tr>
<tr>
<td>2</td>
<td>Meeting the Requirements on Data Storage System</td>
<td>67</td>
<td>Hybrid File Repository and Deployment</td>
</tr>
<tr>
<td>3</td>
<td>Functional Cost of Data Storage System Creation</td>
<td>68</td>
<td>Document Management</td>
</tr>
<tr>
<td>4</td>
<td>Support of Data Storage System Creation by Top Management</td>
<td>69</td>
<td>Workflow</td>
</tr>
<tr>
<td>5</td>
<td>Efficiency of Operational Decisions</td>
<td>70</td>
<td>Electronic Signatures</td>
</tr>
<tr>
<td>6</td>
<td>Existence of Specialised with Previous Working Experience</td>
<td>71</td>
<td>Encryption</td>
</tr>
<tr>
<td>7</td>
<td>Summary of Each Specialised’s Participations</td>
<td>72</td>
<td>Electronic Workflows etc.</td>
</tr>
<tr>
<td>8</td>
<td>Time Needed for Data Storage System Creation</td>
<td>73</td>
<td>Interoperability and Interfaces</td>
</tr>
<tr>
<td>9</td>
<td>System User Principle</td>
<td>74</td>
<td>Non-Functional Requirements</td>
</tr>
<tr>
<td>10</td>
<td>Development Principle</td>
<td>75</td>
<td>Ease of Use</td>
</tr>
<tr>
<td>11</td>
<td>Competence Principle</td>
<td>76</td>
<td>Performance and Scalability</td>
</tr>
<tr>
<td>12</td>
<td>Standardisation Principle</td>
<td>77</td>
<td>System Availability</td>
</tr>
<tr>
<td>13</td>
<td>Univerisible Principle</td>
<td>78</td>
<td>Technical Standards</td>
</tr>
<tr>
<td>14</td>
<td>Principle of New Tools</td>
<td>79</td>
<td>Legislation and Regulatory Requirements</td>
</tr>
<tr>
<td>15</td>
<td>Classification Scheme</td>
<td>80</td>
<td>Outsourcing and Third Party Management Data</td>
</tr>
<tr>
<td>16</td>
<td>Configuring the Classification Scheme</td>
<td>81</td>
<td>Long-Term Preservation and Technology Obsolescence</td>
</tr>
<tr>
<td>17</td>
<td>Classes and Files</td>
<td>82</td>
<td>Hardware</td>
</tr>
<tr>
<td>18</td>
<td>Vocatives</td>
<td>83</td>
<td>Operating Systems</td>
</tr>
<tr>
<td>19</td>
<td>Maintenance of the Classification Scheme</td>
<td>84</td>
<td>Production Standards of User Interface</td>
</tr>
<tr>
<td>20</td>
<td>Controls and Security</td>
<td>85</td>
<td>Relational Database Management Systems</td>
</tr>
<tr>
<td>21</td>
<td>Access</td>
<td>86</td>
<td>Network Protocols and Operating Systems</td>
</tr>
<tr>
<td>22</td>
<td>Aided Tools</td>
<td>87</td>
<td>Implementation of Encryption on Different Levels</td>
</tr>
<tr>
<td>23</td>
<td>Backup and Recovery</td>
<td>88</td>
<td>Exchange Standards</td>
</tr>
<tr>
<td>24</td>
<td>Teaching Record Movements</td>
<td>89</td>
<td>Applied Development Interface and Developers Kit</td>
</tr>
<tr>
<td>25</td>
<td>Authenticity</td>
<td>90</td>
<td>Media Degradation</td>
</tr>
<tr>
<td>26</td>
<td>Security Categories</td>
<td>91</td>
<td>Equipment/Onsetce</td>
</tr>
<tr>
<td>27</td>
<td>Retention and Disposal</td>
<td>92</td>
<td>Forward/Onsetce</td>
</tr>
<tr>
<td>28</td>
<td>Retention Schedules</td>
<td>93</td>
<td>Format Migration</td>
</tr>
<tr>
<td>29</td>
<td>Recovery</td>
<td>94</td>
<td>Equipment</td>
</tr>
<tr>
<td>30</td>
<td>Transfer, Export and Destruction</td>
<td>95</td>
<td>Technology Conservation</td>
</tr>
<tr>
<td>31</td>
<td>Caching Records</td>
<td>96</td>
<td>Alignment of Data and Software</td>
</tr>
<tr>
<td>32</td>
<td>Cache</td>
<td>97</td>
<td>Equipment Monitoring</td>
</tr>
<tr>
<td>33</td>
<td>Load Impacting</td>
<td>98</td>
<td>Data Migration to New Media Media</td>
</tr>
<tr>
<td>34</td>
<td>Types of Documents</td>
<td>99</td>
<td>Observation of Adequate Conditions of Media Storage and Processing</td>
</tr>
<tr>
<td>35</td>
<td>Metadata Management</td>
<td>100</td>
<td>Facilitating Scheduled Media Replacement</td>
</tr>
<tr>
<td>36</td>
<td>Reengineering</td>
<td>101</td>
<td>Saving Several Document Copies and their Comparisons</td>
</tr>
<tr>
<td>37</td>
<td>Searching, Retrieval and Rendering</td>
<td>102</td>
<td>Class Identification</td>
</tr>
<tr>
<td>38</td>
<td>Thematic and Document</td>
<td>103</td>
<td>Folders Hierarchisation</td>
</tr>
<tr>
<td>39</td>
<td>Metadata</td>
<td>104</td>
<td>VHIC Conformity</td>
</tr>
<tr>
<td>40</td>
<td>Document Identification</td>
<td>105</td>
<td>Document Identification</td>
</tr>
<tr>
<td>41</td>
<td>Restrnewing: Printing</td>
<td>106</td>
<td>Extract from a Document</td>
</tr>
<tr>
<td>42</td>
<td>Administrative Functions</td>
<td>107</td>
<td>Configuration 1 (project)</td>
</tr>
<tr>
<td>43</td>
<td>General Administration</td>
<td>108</td>
<td>Configuration 2 (project)</td>
</tr>
<tr>
<td>44</td>
<td>Reporting</td>
<td>109</td>
<td>Configuration 3 (project)</td>
</tr>
<tr>
<td>45</td>
<td>Clamping, Deleting and Reducing Records</td>
<td>110</td>
<td>Configuration 4 (project)</td>
</tr>
<tr>
<td>46</td>
<td>Other Functionality</td>
<td>111</td>
<td>Configuration 5 (project)</td>
</tr>
</tbody>
</table>

Table 2. Ratings (relative weights) of alternative configuration variants

<table>
<thead>
<tr>
<th>Configuration number</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative weight</td>
<td>0.2153</td>
<td>0.2361</td>
<td>0.1875</td>
<td>0.1667</td>
<td>0.1944</td>
</tr>
<tr>
<td>Configuration rank</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 1.  List of criteria (sub-goals, or requirements)

The relative weights (ratings) of five configuration variants mentioned above (and included into the hierarchy at the lowest level as projects with numbers 87-91) are shown in Table 2.

As we can see, Configuration 2 is the best one according to the specified criteria.

4. Conclusions

An expert decision-making support technology for evaluating EDMS configuration variants at pre-development stage is suggested. It proves to be particularly effective while evaluating EDMS configuration variants as to their compliance with non-functional requirements.
The technology allows capturing and considering mutual influences and interconnection of different requirements (represented by Boolean, quantitative and qualitative criteria).

The relative ratings of alternative configuration variants can be calculated using an algorithmically built estimate aggregation function, incorporating Boolean values, quantitative values and (in case feedback is present in the hierarchy graph) – iterative calculation of ratings.

One of the possible directions of future research is extension of the described approach to other EDMS development standards, beside MoReq.

References

Study of Usage Pattern of Information Retrieval Features of Online Databases in University Libraries in India

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Abstract. Most of the Indian University Libraries are presently based on the model of providing access to organized collections, assist the users in information search and circulate documents within the stipulated period of time. Though every university library functions and undergoes changes according to its own mission, objectives, environmental scanning, funding, leadership and staff. With 294 universities/institutions, 13150 affiliated colleges, 88.21 lakh students and 4.27 lakh teachers, it is a great challenge to ensure effective coordination and communication. Under this initiative UGC is modernizing the University Campuses with state-of-the-art campus wide networks and setting up its own nationwide communication network named UGC-INFONET. The UGC-Infonet, INDEST consortium radically changed the conceptual literature search service in the present libraries. The routine users education program, changed the attitude of information search through the online databases among the library users. The present study intended to see different IR features of online databases, response pattern of users on IR features of online databases, users response among the available online databases in Indian university, response rates on subject based online databases and of users response on IR features of online databases. The universities are selected through the frequency bandwidth utilization, it has grouped from lower to higher, and from the each group single university has been chosen. The online databases are selected on the basis of the total; users response. Different Retrieval Features are recorded by analyzing the online databases and accordingly it is also categorization in common to specific. The user’s response has been taken through the laboratory testing as well as questionnaire. The analysis of the response data has been done though statistical methods, the t-test has also conducted for the fulfilment of the requirement of the hypothesis. The major finding has been taken into account Information Retrieval features and its impact on subject based online databases and its users.
1.1 INTRODUCTION

Indian University Libraries are presently based on the model of providing access to organized collections, assist the users in information search and circulate documents within the stipulated period of time. Some have automated their operations for greater efficiency and provide additional facilities for use of the Internet and e-journals. These services are not enough to meet the information service requirements of emerging knowledge society (Jansen, 2005). Moreover, university libraries now have no monopoly for providing academic information, as alternatives are available for accessing academic information. University libraries are thus also facing fierce competition from alternative information services (Diercks, 2003).

Though every university library functions and undergoes changes according to its own mission, objectives, environmental scanning, funding, leadership and staff, there are some common developmental strategies which can be adopted for metamorphosis of these libraries into knowledge resource and service centers.

1.2 ONLINE DATABASES

Indian Universities constitute one of the largest higher education systems in the world. With 294 universities/institutions, 13150 affiliated colleges, 88.21 lakh students and 4.27 lakh teachers, it is a great challenge to ensure effective coordination and communication. Fast changing curricula and frequent introducing of new subjects impose a great demand on the system in general. Indian Universities need to be given the required thrust to enter the third millennium with a leading edge. Technology is a driving force in the contemporary education systems. University Grant Commission has launched an ambitious programme to bring about a qualitative change in the academic infrastructure, especially for higher education. Under this initiative UGC is modernizing the University Campuses with state-of-the-art campus wide networks and setting up its own nationwide communication network named UGC-INFONET

The Ministry of Human Resource Development (MHRD) set up the “Indian National Digital Library in Engineering Science and Technology (INDEST) Consortium”. The Ministry provides funds required for providing differential access to electronic resources subscribed for the consortium to the core members through the consortia headquarters set-up at the IIT Delhi. The total number of members in the consortia has now grown to 115. The INDEST Consortia subscribes to over 4000 electronic journals from a number of publishers and aggregators.

This study is confined to a select old and established eight central university libraries access the length and breadth of the country.
Assam University (AU, 1994), Silchar  
Banaras Hindu University (BHU, 1916, UP)  
Delhi University (DU, 1992) NCR  
Indira Gandhi National Open University (IGNOU, 1985) NCR  
Jamia Millia Islamia (JMI, 1969) NCR  
Jawaharlal Nehru University (JNU, 1969) NCR  
Pondicherry University (PU, 1985) Puducherry  
Viswa Bharti University (VBU, 1951) WB

Of these eight universities the four namely, DU, IGNOU, JMI and JNU are in the National capital Region with others represent South (PU), North – East (AU), and North central (BHU). At the time of study there was no central university in the North West India. This gives fair representation to all the regions of the country. Further these eight universities were chosen on the basis of ranking and grouping their bandwidth utilization (as taken from the Inflibnet, Ahmedabad websites < www.Inflibnet.ac.in >). Two universities in each group representing the highest and the lowest network communication bandwidth were selected.

<table>
<thead>
<tr>
<th>S.NO</th>
<th>NAME OF THE UNIVERSITY</th>
<th>ABBREVIATION</th>
<th>BANDWIDTH UTILIZATION</th>
<th>% OF USAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Assam University</td>
<td>AU</td>
<td>137.6 kb/s</td>
<td>6.7%</td>
</tr>
<tr>
<td>2.</td>
<td>Mizoram University</td>
<td>MU</td>
<td>140.8 kb/s</td>
<td>6.9%</td>
</tr>
<tr>
<td>3.</td>
<td>Maulana Azad National Urdu University</td>
<td>MANUV</td>
<td>157.8 kb/s</td>
<td>7.0%</td>
</tr>
<tr>
<td>4.</td>
<td>Indira Gandhi National Open University</td>
<td>IGNOU</td>
<td>16.4 kb/s</td>
<td>0.8%</td>
</tr>
<tr>
<td>5.</td>
<td>Vishwa Bharati University</td>
<td>VBU</td>
<td>161.1 kb/s</td>
<td>7.7%</td>
</tr>
<tr>
<td>6.</td>
<td>Hyderabad University</td>
<td>HU</td>
<td>163.1 kb/s</td>
<td>7.2%</td>
</tr>
<tr>
<td>7.</td>
<td>Aligarh Muslim University</td>
<td>AMU</td>
<td>213.6 kb/s</td>
<td>10.4%</td>
</tr>
<tr>
<td>8.</td>
<td>Banaras Hindu University</td>
<td>BHU</td>
<td>24.9 kb/s</td>
<td>1.2%</td>
</tr>
<tr>
<td>9.</td>
<td>Jawaharlal Nehru University</td>
<td>JNU</td>
<td>3240.0 b/s</td>
<td>0.2%</td>
</tr>
<tr>
<td>10.</td>
<td>Mahatma Gandhi Antarrashtriya Hindi Vishwavidyalay</td>
<td>MGAHV</td>
<td>427.4 kb/s</td>
<td>19.0%</td>
</tr>
<tr>
<td>11.</td>
<td>Babasaheb Bhimrao Ambedkar University</td>
<td>BBAU</td>
<td>639.0 kb/s</td>
<td>31.2%</td>
</tr>
<tr>
<td>12.</td>
<td>Jamia Millia Islamia University</td>
<td>JAMIA</td>
<td>647.9 kb/s</td>
<td>30.9%</td>
</tr>
</tbody>
</table>
Table 1.1 Bandwidth utilization by the Universities

<table>
<thead>
<tr>
<th></th>
<th>University</th>
<th>Bandwidth Utilization</th>
<th>Percentage</th>
<th>Success Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>Delhi University</td>
<td>649.1 kb/s</td>
<td>31.0%</td>
<td>31</td>
</tr>
<tr>
<td>14</td>
<td>North Eastern Hill University</td>
<td>70.8 kb/s</td>
<td>4.6%</td>
<td>31.2</td>
</tr>
<tr>
<td>15</td>
<td>Tezpur University</td>
<td>782.5 kb/s</td>
<td>38.2%</td>
<td>38.2</td>
</tr>
<tr>
<td>16</td>
<td>Pondicherry University</td>
<td>808.1 kb/s</td>
<td>38.5%</td>
<td>38.5</td>
</tr>
</tbody>
</table>

1.3 METHODOLOGY

Since the study is a maiden attempt, it has taken only 8 central universities out of 18 in India. When this study (Roy, Projes, 2009) started in 2006 there were only 16 central universities subscribed online databases. The present study has been conducted on a sample of eight central universities which are quite old and well established, these eight universities have been chosen on the basis of their bandwidth utilization ranking and grouping (table 1.1). Two universities in each group which represent the highest and lowest bandwidth have been chosen. Out of 8, there are 4 Central Universities are in Delhi, 1 from West Bengal, 1 from Pondicherry, 1 from Assam and 1 from Uttar Pradesh. In the said universities 116 databases are being used by clientele. The major research objective is to identify the difference among the search of users with success in searching from the common databases. One approach might be to look at the results of searches, and relate process to result: this is part of the present research.

The variables selected for study are of quantitative measures. The purpose of using these quantitative measures is that the computer can monitor them automatically and unobtrusively. Thus, if it can be shown that they are related to search performance, they could provide extremely convenient measures of performance.

The population of this study consists of research scholars and faculty members of the university libraries. There are eight universities covered in this study, each university having 40 participants. Of the actual population only 298 participated instead of 320. A separate questionnaire was also prepared for the university librarians, but in most of the university libraries, the information scientists have filled up the questionnaire.

The pilot study has also done to ensure reliability of the study i.e. use of simple language, standardization of questions and also to know the existing defect and ambiguities in the questionnaire. Accordingly the present study conducted a preliminary study in University of Delhi. There 20 users were chosen with utmost care to prevent flaws in the chosen tools of data collection. The population was randomly selected for pre-testing. The pilot study therefore helped the researcher to such discrepancies in the questionnaire. The questionnaires were modified for final distribution on the basis of the opinions.
and suggestions made by the library professionals, Information Scientists and users of the online database.

1.4 SELECTION OF DATABASES

The first phase of study was conducted in accordance with the online databases available in the eight central universities in India. The Universities in India is subscribing the online databases on the basis of their needs in different subjects. Therefore, the databases are varying from university to university. The Seven Universities, out of eight are the members of UGC Infonet Consortia, on the other hand, the only one university i.e. IGNOU is subscribing their Online databases of their own.

The first step was to take all the online databases being used in all the eight universities from their university websites and through personal communications. The INFLIBNET web site is being used here as a tool. It is found that there are 116 databases used by the said universities (Including full text, bibliographic and e-books). As per the availability of the databases, the databases are being ranked in four categories. In the first category are the most common databases which vary from 100% to 80% availability. In second stage are the more common databases, which vary from 79% to 60%, the third stage is common databases, which is vary from 59% to 30% and special category vary from 29% to 10%. All the most common databases have been evaluated thoroughly. The study has categorized all the retrieval features under the following three basic categories i.e. Basic retrieval features, advanced retrieval features and unique retrieval features. And the features have been taken for analysis and interpretation like difficulties faced in using the features; and the features expected by users and missed by the database providers etc.

The users were asked about their use of different online databases. Data regarding preference of online databases has been scrutinized of the eight central universities in India as shown in the table 1.2.

The online databases summarized and ranked in the Table 1.3 are based on percentage of use at the eight central universities in India. Online database Project Muse is being used by most of the respondents, with 64.09 percent of the total usage, and Project Euclid has recorded the lowest usage rate with a mere 1.34 percent.

<table>
<thead>
<tr>
<th>ONLINE DATABASES</th>
<th>RESPONDED</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Muse</td>
<td>191</td>
<td>64.09</td>
</tr>
<tr>
<td>Emerald</td>
<td>144</td>
<td>48.32</td>
</tr>
<tr>
<td>JSTOR</td>
<td>142</td>
<td>47.65</td>
</tr>
<tr>
<td>Annual Reviews</td>
<td>131</td>
<td>43.96</td>
</tr>
<tr>
<td>Publisher/Database</td>
<td>Citations</td>
<td>Impact Factor</td>
</tr>
<tr>
<td>---------------------------------------------------------</td>
<td>------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Wiley Interscience</td>
<td>111</td>
<td>37.25</td>
</tr>
<tr>
<td>American Chemical Society</td>
<td>107</td>
<td>35.91</td>
</tr>
<tr>
<td>American Institute of Physics</td>
<td>103</td>
<td>34.56</td>
</tr>
<tr>
<td>American Physical Society</td>
<td>101</td>
<td>33.89</td>
</tr>
<tr>
<td>Taylor &amp; Francis</td>
<td>98</td>
<td>32.89</td>
</tr>
<tr>
<td>Institute of Physics</td>
<td>92</td>
<td>30.87</td>
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<tr>
<td>Elsevier</td>
<td>89</td>
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</tr>
<tr>
<td>Blackwell Publishing</td>
<td>81</td>
<td>27.18</td>
</tr>
<tr>
<td>Cambridge University Press</td>
<td>81</td>
<td>27.18</td>
</tr>
<tr>
<td>Oxford University Press</td>
<td>72</td>
<td>24.16</td>
</tr>
<tr>
<td>Royal Society of Chemistry</td>
<td>63</td>
<td>21.14</td>
</tr>
<tr>
<td>IEEE/IEE Online Library</td>
<td>51</td>
<td>17.11</td>
</tr>
<tr>
<td>Nature</td>
<td>48</td>
<td>16.11</td>
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<tr>
<td>Portland Press</td>
<td>46</td>
<td>15.44</td>
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<tr>
<td>EBSCO Research Databases</td>
<td>34</td>
<td>11.41</td>
</tr>
<tr>
<td>American Society for Microbiology</td>
<td>30</td>
<td>10.07</td>
</tr>
<tr>
<td>Encyclopedia Britannica</td>
<td>30</td>
<td>10.07</td>
</tr>
<tr>
<td>Biological Abstract</td>
<td>24</td>
<td>8.05</td>
</tr>
<tr>
<td>SciFinder Scholar</td>
<td>21</td>
<td>7.05</td>
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<tr>
<td>Credo Reference</td>
<td>15</td>
<td>5.03</td>
</tr>
<tr>
<td>American Society of Civil Engineering</td>
<td>10</td>
<td>3.36</td>
</tr>
<tr>
<td>BIOSIS Biological Abstract Database Online</td>
<td>10</td>
<td>3.36</td>
</tr>
<tr>
<td>American Society of Mechanical Engineering</td>
<td>9</td>
<td>3.02</td>
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<tr>
<td>Authorama</td>
<td>8</td>
<td>2.68</td>
</tr>
<tr>
<td>Bartleby.com</td>
<td>8</td>
<td>2.68</td>
</tr>
<tr>
<td>Bibliomania</td>
<td>8</td>
<td>2.68</td>
</tr>
<tr>
<td>Sage- E - Books collections</td>
<td>8</td>
<td>2.68</td>
</tr>
<tr>
<td>Complete Works of William Shakespeare</td>
<td>7</td>
<td>2.35</td>
</tr>
<tr>
<td>Alex Catalogue of Electronic Texts</td>
<td>6</td>
<td>2.01</td>
</tr>
<tr>
<td>Project Euclid</td>
<td>4</td>
<td>1.34</td>
</tr>
</tbody>
</table>
On the basis of the Table 1.3 the study can be categorized into different levels of use of online databases in the said university libraries in India. It has been found that a highly used online database is Project Muse and least used online database is Project Euclid. From the above the below given table has been prepared on the basis of the usability. The study has been restricted to the highly used online databases to lowest used databases as shown in the table 1.4.

<table>
<thead>
<tr>
<th>Degree of Used</th>
<th>Category</th>
<th>Number of Databases In Each Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>80 to 100 percent</td>
<td>Very highly used</td>
<td>0</td>
</tr>
<tr>
<td>60 to 79 Percent</td>
<td>Highly used</td>
<td>1</td>
</tr>
<tr>
<td>40 to 59 Percent</td>
<td>Medium used</td>
<td>3</td>
</tr>
<tr>
<td>20 - 39 Percent</td>
<td>Low used</td>
<td>11</td>
</tr>
<tr>
<td>01 to 19 Percent</td>
<td>Very low used</td>
<td>19</td>
</tr>
</tbody>
</table>

From the above figure 1.1, it has been observed that is the category of highly used online databases in the Eight Central Universities in India is Project Muse (64.09%) is highly used, Emerald (48.32%), JSTOR (47.65%), Annual Review (43.96%) are in the category of medium used, Wiley Interscience (37.25%), American Chemical Society (35.91%), American Institute of Physics (34.56%), American Physical Society (33.89%), Taylor & Francis (32.89%), Institute of Physics (30.87%), Elsevier (29.87%), Blackwell Publishing (27.18%), Cambridge University Press (27.18%), Oxford University Press (24.16%), Royal Society of Chemistry (21.14%) are least used online databases in the Eight Central Universities in India.
Out of the eight universities surveyed seven are members of the UGC-Inflibnet consortia where the IGNOU is subscribing to 17 databases of its own, and is not a member of the above consortia. The 116 databases are of the following form:

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bibliographic</td>
<td>15</td>
</tr>
<tr>
<td>E-Books</td>
<td>29</td>
</tr>
<tr>
<td>Full text Journals</td>
<td>72</td>
</tr>
</tbody>
</table>

Total = 116

These databases are from the following Vendors/ Publishers; American Chemical Society (ACS) American Institute of Physics (AIP) Annual Reviews (AR), Blackwell Publishing (BWP), Cambridge University Press (CUP), Institute of Physics (IOP), Institute of Studies in Industrial Development (ISID), J-Gate customs Context Consortia (JCCC), JSTOR, Oxford University Press (OUP), Royal Society of Chemistry (RSC), Society for Industrial and Applied Mathematics (SIAM), Springerlink (SL), and Taylor & Francis (T&F) of the 116 databases strangely enough only one database, namely, project muse <muse.inu.edu>, which 69 database were subscribed by only one university each. For the academic libraries the two most important consortia are UGC-Inflibnet and AICTE- Indest. All the libraries except the IGNOU, have Consortia based database and some have self-subscribed, to DU and JNU have in-house grown databases. The DU is also a member of the AICTE-Indest consortia. Though it is mostly meant for professional and engineering institutes.

All the universities use commercial as well as open source databases; net server and CD-ROM mirror server were very popular among the universities, now university libraries under study are no more offering CD-ROM services. Multimedia databases are available only in DU and JNU, while all the eight libraries own and provide access to fulltext and bibliographic databases .All libraries have self subscribed as well as consortia based databases, whereas the DU and JNU have also developed in –house databases .All the members of the UGC –Infonet library being traditional and general universities under the preview of the UGC, whereas the DU is also a member of the AICTE indent consortia. The study found that only DU, BHU, IGNOU and JNU are hosting open access databases on their websites. Most of the universities allow online access to databases either through their intranet or directly from the www. Experienced librarians prefer campus wide facility for providing access to databases. The AU, IGNOU, Jamia, JNU and Viswa Bharti allow access through campus wide intranet or Internet with identification and password. Desk-top remote access to university resources is preferred by busy scholars .Further it was found that AU, BHU, DU, JNU, PU, Viswa Bharti and IGNOU allow IP enabled access.
1.5 OBJECTIVES OF THE STUDY
- to identify different IR features of online databases
- to identify response pattern of users on IR features of online databases.
- to evaluate users response among the available online databases in Indian university
- to identify response rates on subject based online databases
- comparison of users response on IR features of subject based online databases

1.6 BASIC DATA RETRIEVAL FEATURES OF SUBJECT BASED ONLINE DATABASE
The study gone through different retrieval features of online databases available in Indian universities, beside this the literature review also taken into consideration to determine the basic retrieval features. After analyzed both aspect, the study render some of the features can be grouped in the basic retrieval features, i.e. Entering a Search, Navigation within the results list, Displaying an article from the result list, Searching for a particular journal Issues, Link to “Related Internet links”, Finding the relevance rating for each article, Using the “go to best part” feature and Displaying the definition of a word in an article. The above retrieval features are included into the questionnaire to measure the users response of the different subject based online databases available in Indian universities. The result of the each categories subject response again tested in the t- test (Table 1.5) to see the exact result of the user’s response on science, social sciences and multi disciplinary subject.

Table 1.5 Paired Samples Statistics of Basic Data Retrieval Features among Subject Based Online Databases

<table>
<thead>
<tr>
<th>Performance Variable</th>
<th>t-value</th>
<th>Degree of Freedom</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sciences Vs. Multi Disciplinary</td>
<td>2.693</td>
<td>7</td>
<td>.03</td>
</tr>
<tr>
<td>Multidisciplinary Vs. Social Science</td>
<td>3.044</td>
<td>7</td>
<td>.01</td>
</tr>
<tr>
<td>Social Science Vs. Sciences</td>
<td>.326</td>
<td>7</td>
<td>.75</td>
</tr>
</tbody>
</table>

The above table 1.5 shows that there is a significant difference in the basic retrieval features among the science and multidisciplinary users and Social science and multidisciplinary users but there is no significant difference among the science and social science users.

1.7 ADVANCE DATA RETRIEVAL FEATURES AMONG SUBJECT BASED ONLINE DATABASES
As discuss in previous, the study also determine the different data retrieval features as advances data retrieval features of the online databases. For that some of the retrieval features are grouped and tested on the sciences, social sciences and multi disciplinary online databases i.e. Boolean Operator, Field specific searches, Have rules of precedence with nested queries, Limit field
searches, Match of exact words/phrases, Phases Searching, Proximity search, Range searching, Save search, Search history, Stemming, Subject search, Truncation, Use of thesaurus or permuted index for searching and Wildcard. The above retrieval features are included into the questionnaire to measure the users response of the different subject based online databases available in Indian universities. The result of the each categories subject response again tested in the t- test (Table 1.6) to see the exact result of the user’s response on science, social sciences and multi disciplinary subject.

Table 1.6 Paired Samples Statistics of Advance Data Retrieval Features among Subject Based Online Databases

<table>
<thead>
<tr>
<th>Performance Variable</th>
<th>t-value</th>
<th>Degree of Freedom</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sciences Vs. SOS/HUM</td>
<td>-0.676</td>
<td>14</td>
<td>.510</td>
</tr>
<tr>
<td>Science Vs. Multidisciplinary</td>
<td>-2.435</td>
<td>14</td>
<td>.029</td>
</tr>
<tr>
<td>Social Science Vs. Multidisciplinary</td>
<td>-3.157</td>
<td>14</td>
<td>.007</td>
</tr>
</tbody>
</table>

The Table 1.6 shows that there is a significant difference in the advanced retrieval features among the science and multidisciplinary users and Social science and multidisciplinary users but there is no significant difference among the science and social science users.

1.8 UNIQUE DATA RETRIEVAL FEATURES AMONG SUBJECT BASED ONLINE DATABASES

The data retrieval features again studied and grouped into unique data retrieval features, the features are unique in nature and available in the chosen few online databases i.e. Article locater, Article types, Automatic Translation Software, Citation Search, Classification code, Cross Reference Search, Custom Links, Density of Terms, Explode/Expand Search, E-mailing an Article from the Result List, E-mailing Citations from the Result List, Frequency of terms, Fuzzy Searching, Google Custom Search, Help Menu/Online Tutorial/Guide, Hyphen, Journal Browsing, Lateral Searching, Mapping, Nested Queries, Persistent Links, Punctuation Marks, Query by Example, Reference Link, Searching for Common Phrases, SMART Links, Sort Order, Special Characters, Spell Check, Stop Word, Subject Authority, Suggest Subject Headings, Table of Content and Times Cited. The above retrieval features are included into the questionnaire to measure the users response of the different subject based online databases available in Indian universities. The result of the each categories subject response again tested in the t- test (Table 1.7) to see the exact result of the user’s response on science, social sciences and multi disciplinary subject.
Table 1.7 Paired Samples Statistics of Unique Data Retrieval Features among Subject Based Online Databases

<table>
<thead>
<tr>
<th>Performance Variable</th>
<th>t-value</th>
<th>Degree of Freedom</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sciences Vs. SOS/HUM</td>
<td>-1.865</td>
<td>33</td>
<td>.071</td>
</tr>
<tr>
<td>Science Vs. Multidisciplinary</td>
<td>-7.244</td>
<td>33</td>
<td>.000</td>
</tr>
<tr>
<td>Social Science Vs. Multidisciplinary</td>
<td>-5.011</td>
<td>33</td>
<td>.000</td>
</tr>
</tbody>
</table>

The table 1.7 shows that there is a significant difference in the unique retrieval features among the science and multidisciplinary users and Social science and multidisciplinary users but there is no significant difference among the science and social science users.

1.9 CONCLUSION

The above study intended to find out the scalability of online databases through its specific group of users, the online databases on sciences are popular in Indian university libraries, but that study find that the social sciences online databases are similarly popular in Indian universities. But the multi-disciplinary online databases are not so popular in real sense. As it has not specified by the database vendor for the specific user’s community.

As far as the different retrieval features is concerned, it has found that the science and social science users are smarter enough to know and responded the different retrieval features, where multi-user databases users are are not so concerned with the different data retrieval features. Challenges remain in balancing print and online resources to meet the needs of various groups, organizing resources, and educating users to select resources based on information needs as well as format or convenience. The findings of this study suggest that databases complex user’s interface will have lower use. Promotion of the online catalog as the point of access to online journals will encourage use based on need rather than convenience. A simple and informative user’s interface is very much acceptable by the users. Likewise, libraries also need to consider selecting databases that provide full-text links to their online collections in a seamless manner. Furthermore, database vendors need to be proactive in facilitating access to full-text journals to its users.

The multi-user database needs to do more handwork to attract the users community. Users would benefit from a quick, visual online guide that can be accessed from the login screen or the University homepage. A number of universities in the study had this kind of guide that could be used to help orientate users when they first use the tool. Federated search tools can function on different levels and users can engage with the tool and its functionality to
varying amounts. It would be sensible to have guides to Library home pages that are aimed at different levels of users, or different depths of engagement.

REFERENCE


Assessing Knowledge Management Maturity level of a university library: a case study from Sri Lanka

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Abstract. The purpose of this paper is to present the findings of a study carried out to assess the Knowledge Management Maturity in a university library of Sri Lanka using Kruger’s (2008) Knowledge Management Maturity (KMM) Model.

Using an adaptation of Kruger’s model, KMM of the library was assessed. It was established that overall levels of maturity of different aspects vary. Analysis of the scores by managerial level indicated that there are variations in the perceptions across management levels. As a whole, according to Kruger’s classification, case study library has entered phase two but is not yet ready to reach phase three. Based on the findings, a number of recommendations were made to improve the KMM level.

Keywords: Knowledge Management, Knowledge Management Maturity, Knowledge Management Maturity Models, Knowledge Management Maturity Assessment, University Library, Sri Lanka.

1. Introduction

The purpose of this paper is to present the findings of a study in a university library to investigate its Knowledge Management Maturity (KMM) status and to make recommendation to move the organisation to the required KMM level. In this study KMM of the library was assessed on six aspects; ICT management, Information management, Formulation of knowledge management principles, policy and strategy, implementation of KM, ubiquitous knowledge and Knowledge Management growth.

Durant-Law (2008) argues that KM maturity should not be assessed because there is no agreed definition of KM yet and he continues to say that KMM models only provide some guides on how to measure the initiatives but they do not provide external or internal bench-marking. However, Fry (2008) argues that whether KM is alive, dead or never existed are very much secondary to the question “How well are you doing the KM processes. Hauschild, Licht, and Stein (2001) also argues that a knowledge culture need to be developed in the organization because organizations in which knowledge creation, application and distribution are encouraged have been proved as successful than the
organizations that do not encourage these processes. The library is not forced to adopt KM initiatives by its immediate environment or the parent body therefore one option is to do nothing about it, but based on the arguments of Fry (2008), Hauschild, Licht and Stein (2001), Nonaka and Takeuchi (1995) etc in support of managing knowledge for business success, the author of this paper strongly believe that the case study library needs to gradually move towards phase 6 through phases 3, 4 and 5 to achieve the optimum level of KM maturity. Several options were identified to implement this initiative and these will be discussed in the following section.

The case study university library is the main library of a network consisting of two branch libraries and the main library. It serves a user community of about 5000 consisting of undergraduate and postgraduate students and staff members from five faculties. Nine executive and fifty para-professional staff work in five sub departments (Acquisitions, Periodicals, Cataloguing, Reader Services and General Administration).

The environment in which the library exists is highly volatile as a result of social, political, cultural and economic reasons and it is increasingly felt by the researcher that organisational knowledge needs to be leveraged in a more organised manner in the library. For this, Knowledge Management (KM) needs to be applied strategically. As a prerequisite of planning KM implementation initiatives it was necessary to study the current KMM of the library.

2. Methodology
Of a multiplicity of research methods available it was decided that the case study approach was the most suitable because “In a case study …the researcher explores a single entity or phenomenon (“the case”) bounded by time and activity) a program, event, process, institution or social group) and collects detailed information by using a variety of data collection procedures during a sustained period of time” (Cresswell 1994: 12). Preliminary preparation was accomplished by carrying out a literature review to formulate the theoretical foundations of KMM Assessment and a structured interview schedule based on KMM Model of Kruger and Snyman (2007) and Kruger (2008) was used to gather data.

The base of many Knowledge Management Maturity models seems to be the Capability Maturity Model (CMM) developed by the Software Engineering Institute/ Carnegie Mellon University and an interesting comparison of 10 models can be found in (Khatibian, Pour and Jafari 2010). However, the author’s experience was that most of these papers discuss the model but not the instruments used for measurement, adequately. Most did not present an instrument to be used in a library context or adequate guidelines to develop an appropriate instrument for the library context.
Therefore it was difficult to make a direct judgment on the appropriateness of any particular model, but based on the literature, the author decided that CMM based models are too technical and neglect the strategic management dimension as Kruger and Snyman (2007) comments. Author also had doubts that most of these models will be useful in the university library context.

The model developed by Kruger (2008) was chosen for the study because it eliminated the drawbacks of the CMM-based models. After a pilot study the term “organisation” used in the original instrument was changed to “library” to avoid respondents misinterpreting the term “organisation” as the “parent organisation”. No other changes were made to the original instrument.

The study sample consisted of the seven executives in the main Library representing the top, middle and junior management levels. Data collected were assigned numeric values according to a pre-defined format and MS Excel was used for data analysis and graphical representation. Literature on KM applications in the universities and the organisational strategic plan was also used to support the findings. Based on the overall findings recommendations were made for the library to progress towards KM maturity.

Three limitations were encountered with regard to the study; 1) Lack of time available to carry out an in-depth study (e.g. obtaining perceptions of academics Administrators and students) about KM maturity of the library. 2) Absence of knowledge on KM maturity among the operational staff of the library (therefore they had to be excluded from the survey and 3) Absence of research literature on KM maturity of university libraries to underpin the study.

2. Findings of KM Maturity Assessment

Following section present the findings on overall KM Maturity level of the library, KM Maturity level by managerial level followed by a discussion of the findings.

2.1 Overall KM Maturity level of the library

The overall KM maturity scores assigned by the seven executives of the case study library are given in Table 1. ICT Management and Information Management have received scores of 70 per cent and 69.36 per cent respectively. Yet formulation of KM principles, policy and strategy and implementation of KM have gained only 48.05 per cent and 49.08 per cent respectively. While ubiquitous knowledge has obtained a score of 59.77 per cent KM growth has obtained a score of 14.29 per cent.
Table 1 - Overall KM Maturity level of the library

<table>
<thead>
<tr>
<th>Aspects</th>
<th>L</th>
<th>S1</th>
<th>S2</th>
<th>S3</th>
<th>A1</th>
<th>A2</th>
<th>A3</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ICT Management</td>
<td>18</td>
<td>20</td>
<td>13</td>
<td>11</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>98</td>
<td>70.00</td>
</tr>
<tr>
<td>2. Information Management</td>
<td>60</td>
<td>56</td>
<td>37</td>
<td>57</td>
<td>53</td>
<td>53</td>
<td>53</td>
<td>369</td>
<td>69.36</td>
</tr>
<tr>
<td>3. KM Principles, Policy and Strategy</td>
<td>52</td>
<td>32</td>
<td>28</td>
<td>40</td>
<td>48</td>
<td>48</td>
<td>48</td>
<td>296</td>
<td>48.05</td>
</tr>
<tr>
<td>4. Implementation of KM</td>
<td>51</td>
<td>31</td>
<td>61</td>
<td>53</td>
<td>53</td>
<td>53</td>
<td>53</td>
<td>323</td>
<td>49.08</td>
</tr>
<tr>
<td>5. Ubiquitous Knowledge</td>
<td>44</td>
<td>60</td>
<td>48</td>
<td>40</td>
<td>42</td>
<td>42</td>
<td>42</td>
<td>318</td>
<td>59.77</td>
</tr>
<tr>
<td>6. Assessment of KM growth</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>14.29</td>
</tr>
<tr>
<td>Total</td>
<td>227</td>
<td>200</td>
<td>158</td>
<td>210</td>
<td>208</td>
<td>208</td>
<td>208</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: L=Librarian, S=Senior Asst. Librarian, A=Asst. Librarian

Kruger (2008) identified four levels of KM maturity based on six phases in his model, as Initial, Aware, Manage and Optimise. In order to explain the findings of this survey, percentage values were assigned to these four stages e.g. 0-25% - Initial, 26-50% Aware, 51-75% Manage and 76-100% Optimum and the numerical findings are interpreted using this code.

According to the four levels of knowledge maturity of Kruger (2008), the overall scores indicate that none of the elements out of six is at the optimum level. The managerial staff perceives ICT and IM are managed, library is aware of formulation and implementation of KM, ubiquitous knowledge is managed but growth in KM is at the initial stage. While ICT, IM and ubiquitous knowledge has to move up one step to reach optimum level, formulation of policies and implementation of KM have to move up two steps to reach optimum level. KM growth has to move up three steps to reach the optimum level.

2.2 KM Maturity level by managerial level

The scores assigned by the seven executives in the three managerial groups (Librarian, Senior Asst. Librarians and Asst. librarians) are depicted in Table 2.

Table 2 - KM Maturity level by managerial level

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Librarian</th>
<th>SALs</th>
<th>ALs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ICT Management</td>
<td>90.00</td>
<td>73.33</td>
<td>60.00</td>
</tr>
<tr>
<td>2. Information Management</td>
<td>78.95</td>
<td>65.79</td>
<td>69.74</td>
</tr>
<tr>
<td>3. KM Principles, Policy and Strategy</td>
<td>59.09</td>
<td>37.88</td>
<td>54.55</td>
</tr>
<tr>
<td>4. Implementation of KM</td>
<td>54.26</td>
<td>43.97</td>
<td>56.38</td>
</tr>
<tr>
<td>5. Ubiquitous Knowledge</td>
<td>57.89</td>
<td>64.91</td>
<td>55.26</td>
</tr>
</tbody>
</table>
6. Assessment of KM growth

<table>
<thead>
<tr>
<th></th>
<th>50.00</th>
<th>16.67</th>
<th>0.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall score</td>
<td>63.40</td>
<td>52.88</td>
<td>58.10</td>
</tr>
</tbody>
</table>

Librarian assigned an overall score of 63.40 per cent and ALs assigned an overall score of 58.10 while the Senior Asst. Librarians (SAL) rated it at 52.88 per cent. This indicated a 10.52 per cent variation in the score between the Librarian and SALs, although Librarian has assigned highest scores for four out of six elements. **SALs have assigned the lowest scores for three elements.** As a result a difference of 13.16 per cent in the scores for Information Management, a difference of 21.21 is in the scores for formulation of KM principles, policy and strategy and a difference of 33.33 per cent is indicated in the scores for KM growth is indicated between the Librarian’s and SALs’ scores.

However the difference between the overall scores assigned by the Librarian and Asst. Librarians (AL) is only 5.30 per cent. A significant fact noted is that the ALs have scored the highest for KM implementation (56.38%) and lowest scores for ubiquitous knowledge (55.26%) and KM growth (0.00%) (Table 2).

The overall scores indicated ICT and IM are at a managed level but as SALs’ and ALs’ have indicated (Table 2) has scope for further development. The reason for these two elements to receive a higher score is that most IM activities are already available in the library and to support IM initiatives a reasonably well-developed ICT infrastructure is already available. Low scores (overall as well as by different managerial levels) assigned to formulation of KM principles, policy and strategy and implementation of KM portrays an under-developed status in these domains. While slightly higher overall and managerial level scores for ubiquitous knowledge indicates that it is at a slightly satisfactory level but with a considerable scope for development, the low score obtained by KM growth indicates a weak status of KM development.

The specific differences between the scores of Librarian and SALs have occurred across three elements for which the SALs have assigned the lowest scores: a difference of 13.16 per cent in the scores for Information Management, a difference of 21.21 in the scores for formulation of KM principles, policy and strategy and a difference of 33.33 is indicated in the scores for KM growth. However the overall scores assigned by the Librarian and ALs did have only a difference of 5.30 per cent. A significant fact noted is that the ALs have scored the highest for KM implementation (56.38) and lowest scores for ubiquitous knowledge (55.26) and KM growth (0.00) (Table 2).

There is a considerable variation in the assessment by the three managerial groups (Librarian, Senior Asst. Librarians and Asst. librarians). A difference of 10.52 per cent between the overall scores of the Librarian and SALs is evident but the difference between the overall scores assigned by the Librarian and Asst. Librarians (AL) is only 5.30 per cent.
According to Kruger’s (2008) classification Librarian perceived ICT and IM as on an optimum level while formulation of policies, implementation of KM are perceived as managed. Only awareness was indicated in ubiquitous knowledge and KM growth. SALs perceived ICT, IM and ubiquitous knowledge as managed while they perceived an awareness of formulation of policies and implementation of KM. They perceived KM growth as at initial level. ALs perceived all aspects as managed while KM growth is at initial level.

The inclusive perception and the access to latest strategic management information and policy making regarding the library as well as the positive outlook as the top manager towards the resources, functions and policies may have affected the highest scoring of the Librarian while the low scores assigned by the SALs can be attributed to two factors: 1) their recent exposures to advanced library systems of foreign universities. All SALs who responded to the survey have recently obtained doctoral degrees or in the final stages of their studies at foreign universities and 2) their daily interactions with customers which provide better insights about the infrastructure and policies of the library.

The ALs have just completed the taught elements of Masters in Library & Information Science and hence have high opinions of the ICT infrastructure and the information management and the highest value for KM implementations, and lowest values for ubiquitous knowledge and growth of maturity could be attributed to their less developed perceptions of the overall activities of the library.

2.3 Discussion

According to Kruger and Snyman’s (2007) definitions of KM maturity phases, it indicates that the case study library has moved from Phase 1 and entered phase 2 because it possesses two characteristics of phase two; 1) ICT systems within the organization evolve to a level where the organisation knows what constitutes data and information systems and 2) There is a realization of importance of knowledge (Kruger and Snyman 2007). Yet it is not possible to say that the library is ready to move in to phase 3 because it lacks three characteristics of phase two; 1) Recognition a formal knowledge management function. 2) An associated drive to instill this realization into all levels of the knowledge and 3) There is a distinct expression of the future state of knowledge within the organization (Kruger and Snyman 2007).

This trend in the case study library is not unusual according to the literature related to KM in the universities (Arntzen et.al. 2009, Cranfield & Taylor 2008, Kidwell, Vander Linde, and Johnson 2000). Although there was no evidence of KMM assessments literature related to university libraries all these authors have established that KM initiatives are not well developed within the universities.
3. Recommendations
Adopting a logical sequence for the implementation of KM policies and activities in order to reach the optimum level of maturity several recommendations are made under four types of activities;

1. Policy - Formulate a KM and IM policy for the library, recognising KM as one of the five priorities of the library and incorporating these IM/KM policies with the goals and strategic plan of the library.

2. Strategy - Appointment of a senior staff member from within the library to co-ordinate KM activities, identify a group of executives to support the co-ordinator, planning strategies to implement KM within the library by the KM group and implementing the strategies.

3. Education and Training - Raising general awareness of KM and value of knowledge of all staff through seminars, developing confidence and competences of managerial staff in kn, sharing through seminars / workshops, documenting good practices and follow-ups and offering advanced training programmes in knowledge Management to executive staff.

4. Infrastructure - Evaluating and preparing proposals to improve IT and IM infrastructure, requesting additional funding for infrastructure development and calling for specifications, planning and developing knowledge repositories to suit KM initiatives, evaluating and improving current IM activities and developing ICT and IM tools and services to suit the KM initiatives.

4. Conclusion
Knowledge has become the most vital resource in any organisation today; hence management of knowledge as a strategic activity has received much attention although it has not attracted the attention of libraries yet. This is not unusual as many researchers have established that application of KM is slow in the university sector due to a number of reasons. However the author believes that KM can make a significant contribution to the effective and efficient functioning of the library as many researchers have proved its contribution in increased productivity. An assessment of the current KM maturity level was carried out before planning a KM strategy for the library. A focus group meeting and the strategic plan of the library was used to augment the findings of the KM maturity assessment. It was established that the library is in phase two of the maturity cycle according to Kruger’s (2008) scale. Based on the identified factors, a development plan was provided to move the case study library gradually from phase 2 to phase 6. However the full implementation plan is not provided here as it is the subject of the next assignment.

References


**Acknowledgement** – The valuable guidance and constructive comments of Dr. Karen McPherson, Faculty of Art and Design, University of Canberra, Australia in completing this study is deeply appreciated.
Quantitative Evaluation of the Impact of Novartis Knowledge Center Information Services in Drug Discovery and Development

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Deborah Juterbock, Global Head, Novartis Knowledge Center, New Jersey, USA

Abstract: Novartis Knowledge Center’s (NKC) VALUE (Value Assessment on Library Utilization Efficiency) initiative was created to determine the value of its information services (via its e-library model) in supporting the Novartis mission of bringing innovative drugs to patients and its business drivers for innovation, growth and productivity. To evaluate the business impact and outcomes of NKC’s delivered information services on drug discovery, drug development and marketing at Novartis, NKC enterprise-wide customer satisfaction surveys were conducted in 2008 and 2011. Using the survey data, we examined service relevancy (how NKC services align to Novartis overall strategies and top objectives), efficiency (how quickly and easily NKC customers obtain information relevant to their decision making), and the return on Novartis investment in the NKC. The 2011 survey data results validated that NKC is on track in executing its e-library model strategies, but caution on keeping up with the growing user population.

Keywords: Outcome based performance, business impact, service relevancy, service efficiency, ROI

Introduction

Novartis was formed in 1996 by the merger of two large Swiss firms, Sandoz and Ciba-Geigy, both headquartered in Basel, Switzerland with large operations in New Jersey, USA. Since its creation, Novartis has responded to the challenges of a competitive environment by transforming itself into a global company. Before the acquisition of Alcon in April 2011 and execution of our surveys, Novartis had 100,000 employees in 140 countries and offered a wide range of healthcare products through the Pharmaceutical, Vaccine and Diagnostics, Sandoz (generics), and Consumer Health sectors.

The NKC is the only library and information service hub in the global Novartis community with staff based in Switzerland, the US, the UK, and China. Novartis Associates can access e-library services 24 hours a day, 7 days a week.
from anywhere in the world. The collection consists of scientific, technical, medical and business electronic journals (3000+), e-books (4000+) and databases (nearly 200) delivered via the library portal.

As an information service organization in a for-profit company, NKC contributes to Novartis competitive advantage by providing fast and easy access to relevant, targeted information that supports decision-making. NKC’s enterprise e-library business model was established in 2006 to achieve the goal of enabling decisions that support the Novartis mission of bringing innovative medicines to patients to prevent and cure diseases, to ease suffering, and to enhance quality of life (Chaudhuri, He, and Juterbock, 2010). NKC’s VALUE project was introduced (He, Chaudhuri, and Juterbock, 2009) (He, Chaudhuri, and Juterbock, 2011) along with the NKC critical success factors (CSFs) (He, Chaudhuri, and Juterbock, 2011) to gauge the e-library model’s success.

Methodology
We hypothesize that NKC contributes to Novartis success in achieving its mission and achieves a strong return on the company’s investment through its information services. The CSFs along with Key Performance Indicators (KPIs) have been studied across all Novartis sectors and their primary business functions via multiple projects in VALUE. This paper focuses on the core quantitative KPIs on the three CSFs including: (1) service relevancy, (2) service efficiency, and (3) return on investment (ROI) as evaluated by data derived from customer satisfaction surveys conducted in 2008 and 2011. Both identical surveys (designed with Outsell, Inc.) included specific questions aimed to study NKC business impact at the overall enterprise level, individual sector level, and primary business function/discipline level. For this paper, the focus is on results related to NKC impact on the enterprise level (see appendix for the detailed business impact related survey questions).

Critical Success Factors assessed by survey:

1. NKC service relevancy: The survey asked several questions about what types of business impact were supported by interactions with the NKC, such as to ‘help stimulate ideas for innovation or avoid reinventing the wheel’, ‘manage regulatory compliance issues’, ‘drug safety evaluations’, ‘support the uptake of launched products’, and ‘improve manufacturing yield’. Other questions asked whether ‘using NKC helped save time’, ‘using NKC helped save money’ or ‘using NKC helped generate revenue’. The responses from these questions and resulting data correspond to the Company’s defined CSFs concerning innovation, productivity and growth for its patient/customer-centric strategy.

2. NKC service efficiency: A set of questions assessed how NKC leverages its technology for the fastest possible delivery of relevant information to targeted user populations to support sound decision making. One KPI is the growth of the NKC user community size (at constant budget), which would indicate an increase of efficiency on a per capita level. Another KPI is NKC user
information-seeking efficiency, which is the average weekly hours spent on gathering information using NKC resources. Results from survey questions to assess these KPIs were benchmarked against industry peers.

3. Return on investment for the total value of NKC services provided. Figure 1 defines the relationship among these 3 factors at the concept level.

![Figure 1](image_url)

Figure 1. NKC information service performance quadrants X, Y, and Z are the 3 CSFs in terms of levels of business impact to the company and its users. The four quadrants are the internal process managements with summary attributes. XYZ’s outcomes and the outputs are dependent on all the internal resource alignment to the company’s strategy and information discovery and delivery processes. To achieve the optimal service value (Z), NKC must maximize relevancy (Y) and efficiency (X) of the services it provides.

**Key findings and discussions**

**Analyses of the 2008 and 2011 survey data**

Both surveys covered a sufficient representation of the Novartis user population across 6 sectors and 8 primary business functions from 96 countries and regions in the world (Table 1.)

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of surveys sent</th>
<th>Responses received</th>
<th>Response rate%</th>
<th>Confidence level%</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>19,000</td>
<td>4,769</td>
<td>27</td>
<td>95 ± 1.2</td>
</tr>
<tr>
<td>2011</td>
<td>38,000</td>
<td>6,295</td>
<td>18</td>
<td>95 ± 1.1</td>
</tr>
</tbody>
</table>

Table 1. Survey responses from total of 6 sectors and 8 primary functions, 2008 v. 2011
NKC Service Relevancy
NKC remains cognizant of the pharma external challenging environment and adapts its information services proactively to change within the major user communities (e.g. addition of new therapeutic areas to the Novartis portfolio) and to match the company’s top priorities of innovation, productivity and growth. These adaptations impact information consultancy, learning and training, globally licensed electronic databases, e-journals, e-books, and document ordering services. The tables below summarize survey respondents’ assessments of how NKC helped them achieve these top priorities.

1. Growth

<table>
<thead>
<tr>
<th>Year</th>
<th>Develop a market assessment for new products/indications %</th>
<th>Uptake of launched products %</th>
<th>Bring new or improved products to market %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>24 (530/2,168)</td>
<td>19 (412/2,168)</td>
<td>N/A</td>
</tr>
<tr>
<td>2011</td>
<td>12 (569/4,739)</td>
<td>13 (616/4,739)</td>
<td>11 (521/4,739)</td>
</tr>
</tbody>
</table>

Table 2. Comparison on Growth 2008 v. 2011

The impacted populations are bigger in each case in 2011, but the percentage decline from 2008 to 2011 in the first two impacts suggests that NKC must respond appropriately to ensure growth of the user population.

2. Productivity

<table>
<thead>
<tr>
<th>Year</th>
<th>Saved me time %</th>
<th>Helped me save money %</th>
<th>Change/improve an operational process to reduce cost &amp; increase efficiency (%)</th>
<th>Improve manufacturing yield %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>66 (3,147/4,769)</td>
<td>37 (1,764/4,769)</td>
<td>15 (325/2,168)</td>
<td>N/A</td>
</tr>
<tr>
<td>2011</td>
<td>71 (3,361/4,734)</td>
<td>35 (1,657/4,734)</td>
<td>13 (616/4,739)</td>
<td>4 (190/4,739)</td>
</tr>
</tbody>
</table>

Table 3. Comparison on Productivity, 2008 v. 2011

Survey responses for NKC “Saved me time” increased and “Helped me save money” decreased from 2008 to 2011. The survey response for NKC helped “Change/improve an operational process to reduce cost & increase efficiency” increased from 2008 to 2011 in terms of impacted population (616 vs. 325). Full survey questions on ‘Business Impact’ are reproduced in the Appendix.

These results suggest that NKC services contribute to Novartis growth and productivity. Internally, NKC has shown productivity by operating on a flat budget over these three years yet delivering services to more users. Additional research is needed to assess why “Help me save money” decreased.
3. Innovation
When asked to rank business impact derived from using NKC, the most frequent response was to ‘help stimulate ideas for innovation or avoid reinventing the wheel’, 1,896/4,739 (40%), 2011 (not asked in the 2008 survey).

4. The business impact types vary according to the business/discipline functions (see table 4, higher percentages are Bold). For example, the impact type of “Help stimulate ideas for innovation or avoid reinventing the wheel” received higher responses from respondents in Chemistry and Biology areas as these two disciplines are involved in drug target discovery. Technical Operations is another function where innovation is critical for the enhancement of productivity, and respondents from this group also scored higher on this impact type.

The impact types of “Manage regulatory/compliance issues” and “Drug safety evaluations” received higher scores from respondents in Preclinical, Clinical and Regulatory fields as their work is heavily regulated by healthcare authorities.

<table>
<thead>
<tr>
<th>Table 4. Types of business impact with NKC support across business functions/disciplines</th>
<th>Total</th>
<th>Chem</th>
<th>Biol</th>
<th>Preclin</th>
<th>Clinical</th>
<th>Regul</th>
<th>Tech</th>
<th>Tech</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Help stimulate ideas for innovation or avoid reinventing the wheel</td>
<td>40</td>
<td>60</td>
<td>65</td>
<td>45</td>
<td>35</td>
<td>25</td>
<td>60</td>
<td>30</td>
<td>35</td>
</tr>
<tr>
<td>Keep me updated to adjust objective/project as needed</td>
<td>39</td>
<td>35</td>
<td>40</td>
<td>46</td>
<td>61</td>
<td>25</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>Manage regulations/compliance issues</td>
<td>24</td>
<td>22</td>
<td>28</td>
<td>28</td>
<td>60</td>
<td>24</td>
<td>24</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>Drug safety evaluations</td>
<td>22</td>
<td>27</td>
<td>32</td>
<td>32</td>
<td>60</td>
<td>24</td>
<td>24</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>Improve quality control/assurance</td>
<td>27</td>
<td>22</td>
<td>27</td>
<td>27</td>
<td>47</td>
<td>27</td>
<td>47</td>
<td>29</td>
<td>28</td>
</tr>
<tr>
<td>Make project or candidate selections</td>
<td>20</td>
<td>30</td>
<td>20</td>
<td>20</td>
<td>44</td>
<td>12</td>
<td>14</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Uptake of launched products</td>
<td>22</td>
<td>27</td>
<td>32</td>
<td>32</td>
<td>60</td>
<td>24</td>
<td>24</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>Change/improve an operational process or reduce costs and increase efficiencies</td>
<td>22</td>
<td>27</td>
<td>32</td>
<td>32</td>
<td>60</td>
<td>24</td>
<td>24</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>Develop a market assessment for Novartis production/indicators</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>60</td>
<td>24</td>
<td>24</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>Bring new or improved products to market</td>
<td>24</td>
<td>27</td>
<td>32</td>
<td>32</td>
<td>60</td>
<td>24</td>
<td>24</td>
<td>25</td>
<td>26</td>
</tr>
<tr>
<td>Pursue a patient</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>20</td>
<td>40</td>
<td>12</td>
<td>14</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Help recruit new customers/patients</td>
<td>7</td>
<td>10</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>12</td>
<td>14</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Speed up the production process</td>
<td>7</td>
<td>10</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>12</td>
<td>14</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Pursue licensing/2 dealing/aggregation/technology acquisition</td>
<td>8</td>
<td>10</td>
<td>15</td>
<td>15</td>
<td>30</td>
<td>12</td>
<td>14</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Improve manufacturing yield</td>
<td>6</td>
<td>9</td>
<td>12</td>
<td>12</td>
<td>30</td>
<td>12</td>
<td>14</td>
<td>10</td>
<td>8</td>
</tr>
<tr>
<td>Obtain information answered questions</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>18</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>Not at all/no distinct advantage</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>6</td>
<td>18</td>
<td>6</td>
<td>8</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>
NKC Service Efficiency
NKC works to constantly increase efficiency by leveraging technology to present a user-friendly knowledge portal, expose and repurpose relevant content, implement full-text linking in popular databases, improve search capabilities for finding relevant sources and information, automate news alerting services, and utilize tools to manage knowledge. Efficiency is measured by the NKC customer user community size and ‘NKC users’ information seeking efficiency.

1. NKC user community response size in 2011 has grown by 31% since 2008 (6,295 vs. 4,769). These people use information in support of their jobs. This indicates that NKC could have increased the size of the use population with a lower per capita cost.

2. NKC User information-seeking efficiency is significantly better than the Industry Benchmark in terms of “Gathering information for their jobs” (P<0.01), a similar result as that obtained in 2008.

<table>
<thead>
<tr>
<th></th>
<th>Mean hours (x)</th>
<th>SD</th>
<th>N</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NKC</td>
<td>4</td>
<td>4</td>
<td>3,557</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Industry Benchmark*</td>
<td>5.8</td>
<td>5.5</td>
<td>485</td>
<td>&gt;0.05</td>
</tr>
<tr>
<td>2011</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NKC</td>
<td>4</td>
<td>4.8</td>
<td>4,806</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Industry Benchmark*</td>
<td>4.8</td>
<td>4.9</td>
<td>1,780</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>

Table 5. Information gathering efficiency benchmarked for 2008 and 2011

*Outsell’s Information Management Benchmark Database © 2011 Outsell, Inc. All rights reserved. Reprinted with permission.

These results indicate that NKC users are faster at gathering needed information for their decision making than their industry peers.

Total Return On Investment (Table 6)
Considering today’s economic climate, it is essential to continually evaluate resources and services and their overall ROI for the NKC user community. We propose that two components are considered to measure ROI:

1. The total annual budget (personnel, occupancy, technology and content licenses) is the company’s investment on NKC information services for the user community.
2. The total equivalent dollar value that NKC produces is the sum of NKC User Market Value plus the Saving Value gained from the users’ information seeking efficiency.
The calculation formula is 
\[ \text{ROI} = \frac{((\text{Market Value} + \text{Saving Value}) - \text{total investment on NKC})}{\text{total investment on NKC}} \times 100\% \]

<table>
<thead>
<tr>
<th></th>
<th>2008</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>NKC Market value ($)</td>
<td>$79,950,000</td>
<td>$127,050,000</td>
</tr>
<tr>
<td>Saving value from being efficiency ($)</td>
<td>$3,690,000</td>
<td>$21,750,000</td>
</tr>
<tr>
<td>Total investment on NKC</td>
<td>X1*</td>
<td>X2*</td>
</tr>
<tr>
<td>ROI</td>
<td>1/3.4</td>
<td>1/4.6</td>
</tr>
</tbody>
</table>

*Table 6. Comparison ROI, 2008 v. 2011.* Cost per FTE=$150,000, the average total industry compensation of R&D and Commercial associates.

* These figures are confidential

The ROI derived from 2011 survey is 1: 4.6, which means that with a one dollar investment, Novartis gets a return of 4.6 dollars. Compared to 2008, ROI increased 1.2 dollars more in 2011 for each dollar the company invested.

**Conclusions**

The 2008 survey data established a baseline to measure the success of NKC’s e-library business model on its objectives. The 2011 survey data results validated and confirmed that NKC is on track in executing its e-library model strategies (Chaudhuri, B., He, L. and Juterbock, D., 2010), but caution that NKC must pay attention to delivering a higher level of service to a larger (31%) user population. Specific points include:

1. NKC services are relevant to Novartis businesses by contributing to the company’s major CSFs of innovation, growth and productivity.
2. NKC produced more business value to its user community and achieved a more efficient per user per capita with the 31% growth of the user market in 2011 (with the same budget) compared to that in 2008.
3. NKC services were significantly more efficient in ‘information gathering’ (p<0.01) than the Industry Benchmark in both the 2008 and 2011. Thus, users are able to access needed information faster for their decision making needs in this competitive environment.
4. Overall, NKC delivered an increased ROI (from 1: 3.4 to 1: 4.6) for its user community between 2008 and 2011 based on our experimental assumptions.
5. NKC must investigate the cause of decrease among several types of impacts (despite increase in size) to ensure that services remain on track with the user base growth.

It is imperative that NKC stay focused on the Novartis mission when implementing strategies to provide relevant and timely information to help bring
innovative drugs to patients. NKC can achieve their objectives by continuing to optimize the relevance and efficiency of its information services, resulting in realization of a greater ROI. How we represent this increased ROI through satisfaction and effectiveness of our user community will be explored further to improve our interpretation of value.

References

Appendix
Survey questions around ‘Business Impact’, extracted from the overall survey.

1. Thinking about the instances when you used NKC in the past 12 months, what impact would you say using NKC has had on your job? Would you say that…

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Using NKC has saved me time</td>
<td>1</td>
<td>2</td>
<td>-9</td>
</tr>
<tr>
<td>b. Using NKC has helped me make money (e.g., by providing information that led to launching a new product or supporting a sale)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Using NKC has helped me save money (e.g., by helping you reduce an operational expense)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. In your experience over the past year, what types of business impact did your interactions with the Novartis Knowledge Center support? *Please select all that apply*
Help stimulate ideas for innovation or avoid “reinventing the wheel” 1
Pursue a patent 2
Make project or candidate selections 3
Manage regulatory/compliance issues 4
Drug safety evaluations 5
Help recruit/retain customers/patients 6
Improve quality control/assurance 7
Pursue a licensing/a deal negotiating/ technology acquisition 8
Develop a market assessment for Novartis  products/new indications 9
Uptake of launched products 10
Change/improve an operational process or reduce costs and increase efficiencies 11
Improve manufacturing yield 12
Speed up the production process 13
Keep me updated to adjust objective /project as needed 14
Bring new or improved products to market 15
OTHER, PLEASE SPECIFY: __________________________ 99

3. On average, about how many hours do you spend each week obtaining, reviewing and analyzing information to assist you in your job?

<table>
<thead>
<tr>
<th>Hours each week</th>
<th>OT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Don’t know</td>
<td>-9</td>
</tr>
</tbody>
</table>

And how do those hours break out across the following:

<table>
<thead>
<tr>
<th>Gathering, looking for or pulling the information together</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analyzing and applying the information</td>
<td></td>
</tr>
</tbody>
</table>

4. On average, in the past 12 months how often have you used the Novartis Knowledge Center (NKC) to help you obtain information? Please select only one response
<table>
<thead>
<tr>
<th>Frequency</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily</td>
<td>1</td>
</tr>
<tr>
<td>Several times a week</td>
<td>2</td>
</tr>
<tr>
<td>Once a week</td>
<td>3</td>
</tr>
<tr>
<td>Several times a month</td>
<td>4</td>
</tr>
<tr>
<td>Once a month</td>
<td>5</td>
</tr>
<tr>
<td>Less than once a month</td>
<td>6</td>
</tr>
<tr>
<td>Haven’t used in past 12 months</td>
<td>7</td>
</tr>
</tbody>
</table>
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<th>Page number</th>
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